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**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, 2009; or**

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

**Commission File Number 001-33133**

**METABOLIX, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**04-3158289**  
(I.R.S. Employer  
Identification No.)

**21 Erie Street**  
**Cambridge, MA**  
(Address of principal executive  
offices)

**02139**  
(Zip Code)

(Registrant's telephone number, including area code): **(617) 583-1700**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of exchange on which registered
Common Stock, par value \$.01 per share	The NASDAQ Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act:

**None**

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (Section 229.405 of this chapter) 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 a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer

Accelerated filer

Non-accelerated filer   
(Do not check if a  
smaller reporting company)

Smaller reporting company

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold on the NASDAQ Global Market on March 8, 2010 was \$250.8 million.

The number of shares outstanding of the registrant's common stock as of March 8, 2010 was 26,541,511.

#### **DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the Registrant's definitive Proxy Statement to be filed with the Securities and Exchange Commission (the "Commission") pursuant to Regulation 14A in connection with the 2010 Annual Meeting of Stockholders to be held on May 27, 2010 are incorporated herein by reference into Part III of this report.

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**METABOLIX, INC.**  
**ANNUAL REPORT ON FORM 10-K**  
**For the Year Ended December 31, 2009**

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**Forward Looking Statements**

This annual report on Form 10-K contains "forward-looking statements" within the meaning of 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. In particular, statements contained in the Form 10-K, including but not limited to, statements regarding our future results of operations and financial position, business strategy and plan prospects, projected revenue or costs and objectives of management for future research, development or operations, are forward-looking statements. These statements relate to our future plans, objectives, expectations and intentions and may be identified by words such as "may," "will," "should," "expects," "plans," "anticipate," "intends," "target," "projects," "contemplates," "believe," "estimates," "predicts," "potential," and "continue," or similar words.

Although we believe that our expectations are based on reasonable assumptions within the limits of our knowledge of our business and operations, the forward-looking statements contained in this document are neither promises nor guarantees. Our business is subject to significant risk and uncertainties and there can be no assurance that our actual results will not differ materially from our expectations. These forward looking statements include, but are not limited to, statements concerning: future financial performance and position, management's strategy, plans and objectives for future operations, plans and objectives for product development and commercialization, plans and objectives for present and future research and development and results of such research and development, plans and objectives for manufacturing, the commercialization of environmentally sustainable, economically attractive alternatives to petroleum-based plastics, chemicals and energy, the commercialization of Mirel™ biobased plastic ("Mirel") through our alliance with Archer Daniels Midland Company ("ADM"), sales of Mirel as an alternative to petroleum-based plastics, the construction, start-up and expansion of the Commercial Manufacturing Facility, the production of Mirel at the Commercial Manufacturing Facility, the commercial success of Mirel, the feasibility of extracting bioplastics from plant crops, the commercial viability of plant-produced plastics, recognition of revenue, and management's plans and expectations for revenue, expenses and capital and working capital requirements. Such forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from those anticipated including, without limitation, the following risks: (1) we may not be able to successfully manufacture Mirel at commercial scale in a timely or economical manner, (2) we may not be successful in the development of plant crops for production of plastics or bio-engineered chemicals, (3) if initial sales of Mirel are slower than anticipated, our financial results will be negatively affected, (4) we may not be able to develop manufacturing capacity sufficient to meet demand in an economical manner or at all, (5) we may not achieve market acceptance of our products, (6) we may not be successful in the development of commercial formulations of Mirel, (7) we have limited marketing and sales experience and capabilities, which may make the commercialization of our products difficult, (8) we rely heavily on ADM and may rely heavily on future collaborative partners, (9) our success will be influenced by the price of petroleum, the primary ingredient in conventional petroleum-based plastics, relative to corn sugar, the primary ingredient in Mirel, (10) our future profitability is uncertain, and we have a limited operating history on which you can base your evaluation of our business, (11) we may need to secure additional funding and may be unable to raise additional capital on favorable terms or at all, (12) if we lose key personnel or are unable to attract and retain necessary talent, we may be unable to develop or commercialize our products under development, (13) we may not be able to obtain rights to intellectual property developed by others using our information and technology, which could limit our ability to compete, (14) intellectual property protection for our products is important and uncertain, (15) a substantial portion of the technology used in our business is owned by or subject to retained rights of third parties, (16) third parties may claim that we infringe their intellectual property, and we could suffer significant litigation or licensing expense as a result, (17) if we are unable to manage our growth effectively, our business could be adversely affected, (18) we may not be successful in identifying market needs for new technologies and developing new products to meet those needs, (19) our

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products are made using genetically-engineered systems and may be, or may be perceived as being, harmful to human health or the environment, (20) we face and will face substantial competition in several different markets that may adversely affect our results of operations, (21) we are subject to significant foreign and domestic government regulations, including environmental and health and safety regulations, and compliance or failure to comply with these regulations could harm our business, (22) we may not have adequate insurance and may have substantial exposure to payment of product liability claims, (23) potential future acquisitions could be difficult to integrate, divert the attention of key personnel, disrupt our business, dilute stockholder value and impair our financial results, and (24) each segment of our operations is currently conducted at a single location, which makes us susceptible to disasters or other disruptions.

The forward-looking statements and risks factors presented in this document are made only as of the date hereof and we do not intend to update any of these risk factors or to publicly announce the results of any revisions to any of our forward-looking statements other than as required under the federal securities laws.

## PART I

### ITEM 1. BUSINESS

#### Overview

We are a bioscience company that develops and is in the process of commercializing environmentally sustainable, economically attractive alternatives to petroleum-based plastics, with work underway to do the same with chemicals and energy. We have core capabilities in microbial genetics, fermentation process engineering, chemical engineering, polymer science, plant genetics and botanical science, and we have assembled these capabilities in a way that has allowed us to integrate biotechnology with chemical engineering and industrial practice.

Our first platform, which we are commercializing through Telles, LLC (Telles), a joint venture with Archer Daniels Midland Company, or ADM, is a proprietary, large-scale microbial fermentation system for producing a versatile family of polymers known as polyhydroxyalkanoates (PHA's), which we have branded under the name Mirel™. Through Telles, we intend to sell these bioplastics as biobased and biodegradable, but functionally equivalent, alternatives to petroleum-based plastics. Mirel offers superior biodegradability characteristics and can be used in a wide range of commercial applications, including products used in agriculture and horticulture, compost and organic waste diversion bags, marine and aquatic applications, consumer products, business equipment and durable goods, and general packaging materials. Mirel is now being produced in a new commercial scale plant located in Clinton, Iowa (the Commercial Manufacturing Facility) designed for an annual capacity of 110 million pounds. ADM completed construction of the initial phase of the Commercial Manufacturing Facility in 2009. The Commercial Manufacturing Facility produces biobased and biodegradable Mirel plastic using corn sugar, an abundant agriculturally-produced renewable resource.

Our second technology platform, which is in an early stage, is a biomass biorefinery system using plant crops to co-produce both bioplastics and bioenergy. For this system, we intend to extract polymer from the engineered plant crop, so that the remaining plant material can be used as a biomass feedstock for the production of bioenergy products including electricity and biofuel. We are engineering switchgrass to produce bioplastics in the leaf and stem of the plant. We have also collaborated with the Australian Cooperative Research Centre to do the same in sugarcane, and with the Donald Danforth Plant Science Center to develop an advanced industrial oilseed crop for co-production of bioplastics along with vegetable oil, biodiesel fuel, or oleochemicals. Switchgrass is a commercially and ecologically attractive, non-food energy crop that is indigenous to North America and is generally considered to be a leading candidate for cellulose-derived production of ethanol and other biofuels. Sugarcane is an established energy crop that is well suited for tropical regions of the world. We believe that using these crops to co-produce bioplastics with bioenergy products can offer superior economic value and productivity as compared to single product systems that produce them individually. We have been working on our biomass biorefinery platform using switchgrass for several years, and we believe that we are a scientific leader in this field. Our goal for this program is to have commercially viable plant varieties in pre-commercial field trials within two years. We may also seek to establish alliances with partners to commercially exploit this platform.

As demonstrated by our first two technology platforms, we take an integrated systems approach to our technology development. We are focused on developing entire production systems from gene to end product as opposed to developing specific technologies (for example, gene sequencing, shuffling or directed evolution) or singular aspects of a product's production (for example, providing a key enzyme, catalyst or ingredient). We believe this systems approach optimizes manufacturing productivity and, when commercialized, will enable us to capture more economic value from any platform that we pursue.

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For our third platform we intend to apply our core capabilities in microbial engineering to develop biological routes to other chemicals and chemical intermediates. During 2009 we completed all work under our U.S. Department of Commerce National Institute of Standards and Technology grant, a \$2 million grant aimed at producing four-carbon ("C4") chemicals from renewable sources. C4 chemicals are a large family of chemicals enabling a wide range of end use applications, including engineering resins, urethanes, solvents, and personal care products. We were able to achieve all of the technical milestones outlined in this grant. Based on these accomplishments, we believe we have the technical foundation for an attractive C4 chemicals business. During 2009, we conducted a detailed review of the C4 external economic and competitive landscape, and as a result we are prioritizing the specialty C4 chemicals segment for commercialization. Discussions with potential partners were initiated in 2009 with the goal of commencing scale-up development activities during 2010.

To exploit our first technology platform, we are working closely with ADM to bring the Commercial Manufacturing Facility in Clinton, Iowa to full operations and capacity in advance of customer demand for Mirel. The biodegradable bioplastics that this facility is beginning to produce are highly versatile and range in properties from hard and strong to soft and flexible. These properties allow for a wide variety of commercial applications, offering a biobased alternative to petroleum-derived synthetic materials which are not biodegradable. Through Telles we are positioning Mirel as a premium priced specialty material catering to customers who want to match the functionality of petroleum-based plastic, with the added dimension of environmental responsibility to their products and brands.

With ADM, we have conducted product and business development activities, including production of pre-commercial amounts of Mirel, working with potential customers, and initiating qualification trials of our material for selected customer applications. In addition, we have established commercial supply agreements with several customers through Telles. We expect that our products will initially be sold to companies that are:

- establishing themselves as leaders of the emerging market trend toward environmentally responsible products and services;
- addressing current or anticipated regulatory pressure to shift to more sustainable products; and/or
- selling products in which biodegradability is a key functional requirement.

We have a pipeline of current and prospective customers that reflect each of these traits.

### **Market Opportunity**

#### ***The Plastics Market***

The plastics market is a large and global marketplace consisting of a broad range of polymer resins. The market includes several widely used, high volume commodity resins and numerous lower volume, higher performance resins targeting specialized end uses. Over the past forty years the plastics market has experienced relatively consistent growth driven by a number of important fundamental factors including:

- replacement of traditional materials (glass, steel, aluminum, paper) with lower weight, higher performance plastics;
- increased health and safety requirements necessitating improved consumer packaging;
- consumer demand for enhanced appearance and aesthetics which can be achieved with plastic materials; and
- demand for more durable and functional materials in consumer products.

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The growth in plastic use has generally exceeded overall economic growth as plastics have entered new markets with new product applications based on their functionality and ability to meet user requirements.

There are many different categories of plastics sold in the market today, but they are generally categorized into two broad groups: commodity polymers and engineering specialty polymers. The most commonly known commodity polymers include polyethylene, polypropylene, polystyrene, PET and polyvinyl chloride. The commodity polymers are high volume resins which tend to be lower value-added materials produced in volumes of hundreds of billions of pounds per year. Engineering specialty polymer pricing varies widely based on the type of resin and the performance characteristics offered by the material. However, these resins are typically priced at a premium compared to commodity plastics and, according to *Plastics News*, engineering thermoplastics at annual volumes of 300,000-500,000 pounds were selling at values starting at \$1.10 per pound and reaching, in some cases, \$4.25 per pound in January 2010. At smaller volumes, prices can be higher. In contrast, the commodity grade resins at annual volumes of 2,000,000-5,000,000 pounds were priced between \$0.71 and \$1.66 per pound at that time. Pricing of commodity grade resins has been volatile due to fluctuations in raw material costs, and the availability of supply to meet customer demand.

### ***Emerging Issues Surrounding Petroleum-Based Plastics and Fuels***

The markets for petroleum-based plastics, chemicals and energy are among the largest in the global economy. While these markets encompass a diverse array of products, they are all derived from fossil fuel feedstocks, particularly petroleum and natural gas. The prolonged broad use of these petroleum-based products has created several economic, social and environmental issues, including plastic waste management and pollution, limited fossil fuel availability, energy security and possibly global warming and climate change. These issues have resulted in rising levels of interest in product alternatives that are biobased, sustainable and biodegradable, unlike those produced from fossil fuels.

*Plastic Waste Management and Pollution*—According to the U.S. Environmental Protection Agency, 30 million tons of plastic solid waste was deposited into the U.S. municipal solid waste stream in 2008. Plastics are a rapidly growing contributor to U.S. municipal solid waste, having increased from less than 1% in 1960 to 12% by weight in 2008. In spite of intensive efforts to promote collection and recycling, only 2.12 million tons of plastic or 7.1% of plastic solid waste was recycled in 2008. While the balance is mostly deposited in landfills and waste treatment facilities, many plastic items, particularly single use items such as bottles and caps, cups, lids and straws, and grocery bags, become litter in the environment where they can become a significant problem. Plastic waste can create a significant monetary burden on state and local governments. This situation has led California and local jurisdictions within California to pass legislation banning the use of non-biodegradable plastic bags or imposing significant taxes on them. San Francisco, Manhattan Beach, Malibu and Palo Alto currently have a ban on non-biodegradable plastic bags. Many other cities, including Los Angeles, are considering similar legislation. This trend is also occurring in other parts of the world, including Europe, China, Taiwan and India.

Moreover, current disposal methods may have adverse consequences to people's health, safety and the environment. Most waste is placed in landfills or burned in incinerators. The burning process may produce dioxins and other hazardous substances that are released into the environment. In addition, landfills are filling up and requiring more land sources. Though attempts to slow the growth of landfills have led to recycling legislation, it is still recognized that other solutions will need to be pursued to address the problem.

The threat that petroleum-based plastics pose to the marine ecosystem has been well documented. Studies have noted that the world's oceans show increasing levels of persistent plastic particles of a size ingestible by marine creatures at the bottom of the food chain. Larger plastic items are also



accumulating in large quantities in certain parts of the ocean, and marine birds and mammals have been found killed by ingesting or getting tangled in plastic debris.

*The Limited Long-Term Availability of Fossil Fuel*—Declining domestic production in the United States, higher demand in the developed world, rising demand in emerging markets, the increasing cost of drilling activities and underinvestment in infrastructure are all factors that limit the long-term availability of fossil fuel. The lack of substantial excess supply and increasing proportion of hydrocarbon reserves in politically unstable regions leaves the existing petrochemical market subject to significant risk of supply disruptions or dramatically volatile oil prices. Because fossil fuels are the primary feedstock for the plastics industry, polymer prices are affected by fossil fuel supply disruptions and price volatility. World oil prices have fluctuated greatly from \$145 per barrel during 2008 to \$40 per barrel in early 2009, and then back up to \$78 in early 2010. There is a growing view that developing alternatives to fossil fuel is a matter of national security. While the United States accounts for just 4.5% of the world's population and less than 3% of the world's oil reserves, the United States consumes about 25% of world oil production. The majority of the U.S. oil needs are imported, with significant supplies coming from unstable or politically risky parts of the world (the Middle East, Nigeria, Venezuela, and Russia), presenting risks to the economy and national security. Furthermore, oil is not a sustainable resource and there is growing concern that the natural peak for production may occur within the next 20 years.

*Global Warming and Climate Change*—There is a growing scientific consensus that global climate change is occurring and that the rise in carbon dioxide emissions in recent years has contributed to this situation. A significant source of carbon dioxide emissions comes from the use of fossil fuel. The broad acceptance of the Kyoto protocol is evidence of the widespread concern for global climate change in the industrialized world. In the United States, companies have started to account for carbon emissions, track their carbon footprint and develop a life cycle assessment of their products to prepare for carbon limits and credit trading schemes, and to seek solutions for reducing their carbon emission profile.

### ***Fuels and Bioenergy Markets***

According to the U.S. Department of Energy's Report on International Energy Outlook dated May 2009, worldwide demand for liquid fuels and other petroleum could potentially rise from approximately 85 million barrels a day in 2006 to approximately 107 million barrels per day in 2030. The issues surrounding petroleum previously discussed have given rise to increasing demand for fuels produced from renewable sources. Many states are considering legislation to capitalize on the environmental and energy security benefits of renewable fuels by requiring their use.

In December of 2007, President Bush signed into law H.R. 6, the "Energy Independence and Security Act," which includes a historic Renewable Fuels Standard (RFS) calling for at least 36 billion gallons of ethanol to be used nationwide by 2022; an increase from the 9 billion gallons of ethanol used in 2008. This long-term growth plan for ethanol is intended to spur its commercialization from cellulosic feedstocks such as switchgrass, crop residues, forestry waste, and many other materials from all regions of the country. Beginning in 2016, an increasing portion of renewable fuels must be advanced biofuels, starting at 3 billion gallons in 2016 and increasing to 21 billion gallons in 2022. The National Commission on Energy Policy estimates that the new RFS and the increased fuel efficiency standards in the bill will reduce domestic oil use by more than 4 million barrels per day by 2030.

While ethanol is typically produced from starch contained in grains such as corn and grain sorghum, it can also be produced from cellulose. Cellulose is the main component of plant cell walls and is the most common organic compound on earth. The production of ethanol from corn is a mature technology that is not likely to see significant reductions in production cost. The ability to produce ethanol from low-cost biomass will be an important factor in making it competitive as a gasoline additive.

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Oilseed crops are of importance for feed, food and industrial applications. The chemical conversion of vegetable oils derived from oilseed crops to a variety of oleochemicals is already well established. A very important and growing area of application is the production of biodiesel by transesterification of vegetable oils with either methanol or ethanol to produce the corresponding methyl or ethyl esters. Biodiesel is a very good fuel that reduces ground level ozone, reliance on petrochemical resources, and greenhouse gas emissions.

### **The Metabolix Solution**

We have developed a family of bioplastics which are economically attractive alternatives to petroleum-based plastics. This family of bioplastics is biobased, biodegradable and functionally equivalent to commodity petroleum-based plastics. The use of a renewable agricultural feedstock as a manufacturing input and the biodegradability of our bioplastics can potentially address many of the issues associated with petroleum-based products. Our first product, Mirel, which is now being commercialized through Telles, our joint venture with ADM, is produced from corn sugar using our proprietary, large-scale microbial fermentation system. We are also developing a proprietary platform technology for co-producing plastics, chemicals and energy in crops such as switchgrass, sugarcane, and oilseeds. Our targeted addressable global markets are plastics for use in agricultural/horticultural applications, compost and organic waste diversion bags, marine and aquatic applications, consumer products, business equipment and durable goods, and general packaging. Together the addressable global markets for our products exceed two billion pounds per year.

***An Alternative Solution to Plastics in the Environment***—Mirel is biodegradable under a wide variety of conditions and therefore can help reduce waste in the environment. Mirel is biodegradable in natural soil and water environments, home composting systems, and industrial composting facilities, in areas where such facilities are available. The rate and extent of Mirel's biodegradability will depend on the size and shape of articles made from it. Like nearly all bioplastics and organic matter, Mirel is not designed to biodegrade in conventional landfills. However, Mirel can reduce waste sent to landfills by providing composting alternatives. Mirel resins are the only non-starch materials to receive all four Vinçotte certifications for biodegradability in natural soil and water environments, industrial composting units, and home composting systems. Vinçotte is the recognized European authority on materials inspection, certification, assessments and technical training. Mirel resins will also biodegrade in marine environments in accordance with the U.S. ASTM D7081 standard for non-floating biodegradable plastic in marine environments. It is critical to note, however, that Mirel is functionally durable under hot or wet conditions. Mirel will not begin to biodegrade until it is exposed to environments where there is microbial activity, such as soil, home compost, industrial compost or marine environments.

***Greenhouse Gas Emissions***—We believe that the widespread use of our biobased plastics can decrease the use of fossil fuel and also offer our customers material solutions that reduce their greenhouse gas (GHG) footprint. Our current life cycle assessment (LCA) model for Mirel has identified the feasibility of reaching carbon neutrality using renewable energy sources in the manufacturing process. We expect to have an independent third party LCA review completed by the end of 2010 supporting this determination. Furthermore, the direct production of biobased plastics in plant crops such as switchgrass will have the added benefit of removing carbon dioxide from the environment through photosynthesis.

***Leveraging Agricultural Commodity Pricing Relative to Petrochemical Costs***—Our use of corn sugar as a feedstock to produce Mirel and our use of other plant crops to co-produce plastics will reduce the reliance on fossil fuel as the primary input source, thus significantly addressing the effects of the fluctuating cost of fossil fuel. We believe that polymers based on agricultural feedstocks, such as Mirel, may experience a more predictable cost structure and may become competitive to traditional petroleum-based polymers over time. While Mirel will be produced using corn sugar, other sugars

including cane or cellulosic sugar as well as vegetable oils can be used as feedstocks, which can enhance cost stability. The relative cost contribution of corn to Mirel is significantly less than that of the feedstocks for traditional petroleum-based polymers. Furthermore, even if pricing dynamics for corn and corn sugar change from past experience, we believe the volatility of oil prices will provide an incentive to diversify feedstocks.

**Reducing Dependency on Foreign Energy**—We believe the widespread use of our Mirel can help lower the United States' exposure to imported oil. In addition, we believe that the plastic-producing crops, which we intend to develop, offer the United States an additional opportunity in biofuels production, which currently is focused primarily on corn-based ethanol. We estimate that an annual crop of 160 million tons of plastic-producing switchgrass could produce fuel equivalent to one million barrels of oil per day, approximately 5% of current U.S. oil consumption, as well as 15 million tons of polymer per year.

#### **Formation of Metabolix**

Polymers are found in nature in a wide range of organisms including microbes, plants and animals. Polyhydroxyalkanoates, or PHAs, also naturally occur within certain organisms, including microbes. These microbes use PHA to store energy and consume it for food when needed. It is this characteristic that gives Mirel its biodegradability.

Though PHA polymers are found in nature, their production in wild-type bacterial strains is inefficient and costly for commercial purposes. In 1981, Imperial Chemical Industries, or ICI, developed a controlled fermentation process using a wild-type bacterial strain to produce a PHA copolymer that they introduced under the trade name Biopol. While a handful of applications were developed for Biopol, the cost to produce the polymer using the naturally occurring bacterial strains that were available at the time was prohibitively high and its performance properties were limited. Commercialization was not possible, but the Biopol assets remained largely intact and were eventually sold to Monsanto, Inc.

By the late 1980s, tools for genetic engineering had advanced significantly, and microbes were already being genetically designed to produce various products, such as protein drugs. At the Massachusetts Institute of Technology, Dr. Oliver Peoples, our Chief Scientific Officer, working in the lab of Dr. Anthony Sinskey, a member of our Board of Directors, identified the key genes required for the biosynthesis of Mirel and invented and patented the first transgenic systems for their production. The use of genetically engineered production organisms, instead of wild-type strains, broadly expanded the number of compositions that could be made and enabled the tight level of control and high efficiency and productivity that are required for cost-effective industrial manufacturing.

Our company was formed in 1992 to exploit these discoveries. In order to fully capture the opportunity, we acquired Monsanto's patent estate related to biobased plastics, which included the Biopol assets, in 2001. We have since fully developed an integrated manufacturing process using transgenic strains for fermentation and a proprietary recovery process. This integrated manufacturing process is being incorporated into the Commercial Manufacturing Facility. We have also developed proprietary plastic formulation technology, and we are also developing our platform technology for co-producing plastics, chemicals and energy in crops such as switchgrass, oilseeds and sugarcane.

#### **Business Strategy**

Our goal is to be the leader in discovering, developing and commercializing economically attractive, environmentally sustainable alternatives to petroleum-based plastics, chemicals and energy. To achieve this goal, we are building a portfolio of programs that we believe will not only provide an

attractive slate of commercial opportunities but will also generate leading and competitive intellectual property positions in the field. Key elements of our strategy include:

***Establishing Production of Mirel***—As part of our strategic alliance, ADM has completed construction of the initial phase of the Commercial Manufacturing Facility in Clinton, Iowa to produce Mirel. The ADM site was designed for an annual capacity of 110 million pounds and can be expanded to accommodate significant production beyond its initial capacity. The plant began manufacturing operations in December of 2009.

***Market Positioning and Sales***—We have put in place a marketing and sales team to educate and develop the prospective customer base for Mirel on behalf of Telles, our joint venture with ADM. This team is focused on positioning Mirel as a premium priced, specialty material that is an environmentally attractive alternative to petroleum-based plastics and lower performance bioplastics. Consistent with this positioning, we are marketing our biobased and biodegradable plastic under the brand name Mirel™ and will seek to co-brand Mirel with Telles customers. The focus of this effort is to build a pipeline of customers across a range of applications. It is our goal to establish customer relationships that will lead to purchase commitments for the 110 million pound annual design capacity of the Commercial Manufacturing Facility and then, ultimately, to expand the plant beyond its initial capacity.

***Continuing Microbial Research and Process Development***—We have identified opportunities to improve our production strains and our fermentation and recovery processes. We believe that significant reductions in the operating and capital cost to manufacture Mirel can occur as we successfully exploit these opportunities. We also believe that as we acquire more experience with manufacturing our products at commercial scale, we will identify and make further improvements.

***Developing Applications for Mirel***—We have developed formulations of our polymer suitable for injection molding, blown and cast film, sheet and thermoforming. These grades are being refined further to tailor them for specific customer performance requirements and applications. In addition, we are developing new formulations and processing protocols to extend the use of Mirel into foam and non-woven applications.

***Advancing Switchgrass Research and Other Plant Strains***—We believe that we are pioneering the technical process of introducing multigene traits into plant crops for the production of plastics directly in the plant. Our switchgrass platform is currently in the research phase. In August 2008, we announced that in greenhouse trials, switchgrass plants engineered using Metabolix multi-gene expression technology produced significant amounts of PHA bioplastics in leaf tissues. This result, developed using Metabolix's expertise in pathway engineering in plants, was the first successful expression of a new functional multi-gene pathway in switchgrass. It demonstrated the Company's path breaking bioengineering capabilities as a powerful tool for maximizing the potential of biomass crops for both bioplastic and biofuel production. In October of 2009, we completed a field trial of tobacco, genetically engineered to express polyhydroxyalkanoate (PHA) biobased polymers. The trial was performed on 0.8 acres of land and provided valuable data and information relating to polymer production, with the best plants producing 3-5% PHA. This furthers development of Metabolix crop technologies for the co-production of biobased plastics in non-food bioenergy crops. We intend to continue improving our plant strains to achieve even higher levels of PHA content by weight. We are also exploring additional crop varieties that offer attractive commercial opportunities. These include oilseed, which is suitable for northern climates and can co-produce PHAs along with biodiesel feedstock, and sugarcane, which is suitable for tropical climates and can co-produce PHAs along with ethanol feedstock.

***Partnering our Plastics in Plant Crops Programs***—As appropriate, we may seek to leverage our technology and establish strategic partnerships with one or more industry leading companies that can provide access to resources and infrastructure valuable for commercializing these platforms. These partnerships may take the form of large-scale strategic collaborations, or more limited collaborations

with partners having complementary strengths, for example in biorefinery operations or marketing. We may also seek funding through government grants or other government programs aimed at promoting development of biobased plastics and fuels. In 2007 we formed a collaboration with the Australian Cooperative Research Centre to engineer sugarcane to produce bioplastics in the plant. During 2008 we established a strategic research collaboration with the Donald Danforth Plant Science Center to develop an advanced industrial oilseed crop for co-production of bioplastics along with vegetable oil, biodiesel fuel, or oleochemicals.

***Building Governmental Awareness of Our Approach***—Policy makers are seeking opportunities to reduce dependence on imported fossil fuel, decrease carbon dioxide emission, and address landfill and pollution issues. During 2008 and 2009, we worked closely with several groups and individuals in California to address these issues. We intend to continue to pursue our governmental affairs initiatives, primarily in California, which is well known as a leader in environmental legislation. We believe that higher awareness of our solutions may result in legislation that can facilitate and accelerate the adoption of our products.

***Extending Our Technology to Sustainable Production of Chemicals and Intermediates***—We believe that our technical capabilities can be applied to produce important commercial chemicals and chemical intermediates through biological conversion of sustainable feedstocks such as sugars. Through our integrated bio-engineered chemicals program, we are conducting research into the development of sustainable solutions for chemicals and intermediates, including widely used C4 industrial chemicals. As appropriate, we may seek to establish strategic partnerships or other collaborations to advance these programs.

***Furthering our Leading and Competitive Intellectual Property Position***—We have built a patent estate around our platform technologies and a variety of inventions relevant to the commercialization of Mirel. We continue to extend this patent estate within our core business as well as within other commercial opportunities in the area of biobased plastics, chemicals and energy. We have licensed our technology, and where appropriate, we will continue to license our intellectual property to others in fields outside our areas of interest. Some of the areas in which we may seek to establish leading and competitive intellectual property include:

- intermediates and chemicals produced by microbial fermentation ;
- plant varieties to co-produce plastics and energy (e.g., ethanol and biodiesel); and
- plant strains that optimize crop yields and processing traits for conversion to energy.

## **Mirel**

Our first platform, which we are commercializing through Telles, our joint venture with Archer Daniels Midland Company, or ADM, is a proprietary, large-scale microbial fermentation system for producing bioplastics. Our microbial fermentation system combines our proprietary engineered microbes with corn sugar and other materials in a fermenter. The microbes digest the corn sugar and produce the PHA bioplastics inside themselves. The bioplastics are then separated from the remainder of the microbes and formulated into final form for commercial sale under the brand name Mirel.

### ***Alliance with Archer Daniels Midland Company***

In 2006, we entered into a commercial alliance with ADM Polymer Corporation, a wholly-owned subsidiary of ADM, one of the largest agricultural processors in the world. The commercial alliance has two phases, which are described below and include: (i) a Commercial Alliance Phase and (ii) a Joint Venture Phase.

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**Commercial Alliance Phase**—The purpose of this phase is to build the Commercial Manufacturing Facility, to market and sell Mirel through a joint venture company owned equally by Metabolix and ADM Polymer, which we have named Telles, to make arrangements for the financing of the operation and to allocate distributions of cash flow. The first part of the Commercial Alliance Phase is the Construction Phase. The Construction Phase of the commercial alliance will end, and the Commercial Phase will begin, upon the achievement of a milestone referred to in the Commercial Alliance Agreement as "First Commercial Sale." Achievement of this milestone requires the sale by Telles to third parties of at least one million pounds of Mirel manufactured at the Commercial Manufacturing Facility. Sales must meet certain criteria, including a minimum order size, product must be accepted by the customers in accordance with the terms of their contracts, and payment must be received from the customer in order for such sales to contribute towards the First Commercial Sale milestone.

The Commercial Alliance Phase will last until the expiration of the US patents licensed under the agreement (including patents licensed by us to Telles and patents claiming inventions made during the strategic alliance with ADM Polymer), unless we and ADM enter the Joint Venture Phase (as described below) or unless either party terminates the strategic alliance. During the Commercial Alliance Phase, ADM is responsible for and finances construction of the Commercial Manufacturing Facility, which it owns. In addition, ADM will finance the working capital requirements of Telles. We are responsible for establishing compounding operations, and we will take responsibility for continuing research and development. In addition, we will lead the sales and marketing efforts on behalf of Telles until the end of the Construction Phase. At that time, Telles will assume control of, and pay for, such activities. The Commercial Alliance Agreement called for Telles to pay quarterly support payments of \$1,575 each. The last of fourteen quarterly support payments was received as of June 30, 2009. All quarterly support payments received from ADM on behalf of Telles, totaling \$22,050, have been recorded as deferred revenue on the Company's balance sheet and we will continue to defer recognition of these payments received from ADM during the Construction Phase of our agreement. We expect to begin recognizing this deferred revenue upon commencement of the Commercial Phase. At the time of the First Commercial Sale of Mirel all amounts will be recognized on a straight line basis over a period of approximately ten years in which our contractual obligations are fulfilled in accordance with the terms of the Commercial Alliance Agreement. Upon the commencement of the Commercial Phase of the alliance, Telles will pay royalties to us for all Mirel sold by Telles. Telles will also pay manufacturing fees to ADM for production of Mirel and will pay compounding fees to us for certain compounding services. Telles will compensate ADM and us for services that we each may provide under separate service agreements. For example, we anticipate that we will provide research, development, marketing and sales services to Telles under such a service agreement.

ADM is responsible for the financing and construction of the Commercial Manufacturing Facility to the full 110 million pound annual designed capacity. ADM owns and operates the Commercial Manufacturing Facility under a manufacturing agreement with Telles. Although Telles is a separate legal entity owned equally by Metabolix and ADM Polymer, ADM Polymer is disproportionately funding the activities of the joint venture subject to certain limitations. In order to rebalance the respective investments made by the parties, a preferential distribution of cash flow will be used, whereby Telles' profits, after payment of all royalties, service reimbursements and other operating expenses, will be distributed to ADM until ADM's disproportionate investment in Telles, including the costs of constructing the Commercial Manufacturing Facility, have been returned to ADM. Once ADM has recovered such amounts, the profits of Telles will be distributed in equal amounts to the parties.

Our agreements with ADM limit ADM's and our right to work with other parties or alone, in developing or commercializing certain PHAs produced through fermentation. These agreements do not, however, limit our right to develop, manufacture or sell biobased plastics, including PHAs, produced through plants such as switchgrass, sugarcane or oilseeds (rather than through fermentation) independent of the alliance.

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These agreements also include detailed provisions setting out the rights and obligations of the parties in the event of a termination of the Commercial Alliance. These provisions include the right of the parties to terminate the Commercial Alliance upon default of a material obligation by the other party after a notice and cure period has expired. The parties are also permitted, under limited circumstances, to terminate the Commercial Alliance if a change in circumstances that is not reasonably within the control of a party makes the anticipated financial return from the project inadequate or too uncertain. ADM and we have agreed that the following are examples of a change in circumstances beyond the reasonable control of ADM:

- a third party challenge to the validity or enforceability of our technology or patent rights relating to our fermentation program;
- the emergence of a third party's superior technology;
- an increase in the projected cost required to construct the Commercial Manufacturing Facility or to manufacture Mirel; and
- a decrease in the projected sales volume of Mirel.

The agreement does not provide examples of a change in circumstances beyond our reasonable control. Finally, the parties have specific obligations to fulfill in the event of termination or if they file for bankruptcy protection. The obligations on termination are generally structured to permit the non-breaching party (in the event the strategic alliance is terminated due to a breach of the agreements) to continue to develop the business established by the alliance. For example, on such a termination due to a breach by us, ADM would be permitted to continue to produce and sell Mirel (generally in limited quantities and subject to a royalty to us) and we would be required to perform compounding services for ADM for a period of time following the termination. Similarly, on a termination due to a breach by ADM or termination by ADM due to a change in circumstances, we would be permitted to continue to produce and sell Mirel, and ADM would be required to perform manufacturing services for us for a period of time following the termination (subject to certain payment obligations to ADM).

**Joint Venture Phase**—When projected market demand exceeds the 110 million pound annual capacity of the Commercial Manufacturing Facility and the initial license granted by us, ADM has the option to form a new entity with us in order to build additional capacity and expand the commercial operation beyond the limits of the initial production capacity. The new joint venture entity would be owned equally by Metabolix and ADM Polymer. Under certain circumstances, if ADM does not exercise its option, Metabolix would have an opportunity to manufacture and sell Mirel independent of the Commercial Alliance. While the forgoing principles of the joint venture have been agreed to, the detailed terms and conditions will not be determined until a later date.

### **The Value Proposition of Mirel**

We believe Mirel offers the broadest range of properties and processing options compared to today's existing bioplastics. We believe Mirel's unique combination of being both biobased and biodegradable while having comparable functional properties to petroleum-based polymers stands alone in the bioplastics marketplace. Where possible, we intend to co-brand the products that incorporate Mirel. Prospective buyers of Mirel are seeking not only the functional properties Mirel provides, but also the ability to promote their use of sustainable and renewable products. Co-branding enables our customers to convey environmental responsibility to their end consumers by referencing our brand with their product. Mirel is being positioned as a specialty material that can serve both a functional need (which petroleum-based polymers may satisfy) and consumer preference for environmental responsibility (which petroleum-based polymers cannot address). Consequently, we expect Telles to price Mirel as a specialty product at a premium compared to the prices of large volume commodity

polymers but comparable to a number of specialty polymers. The business model for positioning products with an environmental benefit at a higher price is increasingly prevalent with examples in several different industries ranging from retail food stores to gasoline-electric hybrid automobiles. Our strategy is to enter the market with premium priced products that address specialized segments that can be served competitively by Mirel's distinctive properties. Telles will sell Mirel in pellet form (for further processing and re-sale as finished goods or components by customers) and may also sell Mirel in densified form, as a blend with other biodegradable materials, or in other forms as may be determined by Telles and its customers.

We believe that the principal advantages of our products will be the ability to use renewable feedstocks and biodegradability combined with their performance when compared to alternative products. We believe Mirel products are unique compared with other biodegradable (both petroleum and renewable resource based) plastics when compared based on the following factors:

*Biodegradability*—Mirel will biodegrade due to the action of microbial agents in a wide variety of conditions, including home and industrial compost systems, soil, anaerobic environments such as those found in anaerobic digesters and septic systems, and marine, fresh water environments. The rate and extent of Mirel's biodegradability will depend on the size and shape of the articles made from it as well as the specific end-of-life environment. However, like nearly all bioplastics, Mirel is not designed to biodegrade in landfills. Many plastics considered to be biodegradable only degrade in a controlled municipal industrial compost facility.

*Biobased, Renewable Feedstocks*—Because fossil fuels are the primary feedstock for the plastics industry, polymer prices can be adversely affected by fossil fuel supply disruptions and price volatility. Mirel is produced using a biobased, renewable feedstock, which may lead to a more predictable cost structure when compared to petroleum-based plastic. Biobased feedstock generates carbon through photosynthesis, which takes carbon out of the air. The use of fossil fuels as feedstock extracts carbon from the ground. Taking carbon out of the air, as opposed to extracting it from the ground, reduces greenhouse gases and improves the carbon footprint of the raw materials used to produce plastic.

*Property Range*—Similar to petroleum-based plastic, Mirel possesses a particularly broad range of functional properties, varying from stiff to flexible.

*Processability*—Mirel can be processed in many types of existing conventional polymer conversion equipment that is currently being used for petroleum-based plastic.

*Upper Service Temperature*—Mirel will withstand temperatures in excess of 100° C, i.e., the boiling point of water, an important threshold. Some formulations of Mirel can withstand temperatures up to 130° C.

*Resistance to Hydrolysis*—While Mirel will biodegrade in marine and fresh water environments, it is resistant to reacting with cold or hot water over the intended life span of the product.

*Carbon Footprint*—Our current life cycle analysis (LCA) model for Mirel has identified the feasibility of reaching carbon neutrality using renewable energy sources in the manufacturing process. We expect to have an independent third party LCA review completed by the end of 2010 supporting this determination.

### ***Biobased and Biodegradable***

Mirel has the unique advantage in the marketplace of being both biobased and biodegradable while having comparable functional properties to petroleum-based polymers. However, in today's marketplace there is sometimes confusion about the use of the terms "biobased" and "biodegradable." Telles has committed to following industry guidelines when making these claims. Mirel bioplastic resin



received the certification of "OK Biodegradability Soil" for natural soil biodegradability and "OK Biodegradability Water" for fresh water biodegradability from Vinçotte in 2008. During 2009, Mirel bioplastic resin received the Vinçotte certification of "OK Compost" for compostability in an industrial composting unit and "OK Compost Home" for compostability in home composting systems. Vinçotte is the recognized European authority on materials inspection, certification, assessments and technical training. Mirel bioplastic resins are the only non-starch bioplastic to gain all four Vinçotte certifications. In addition to the Vinçotte certifications Mirel bioplastic resins have been certified compostable by the Biodegradable Products Institute (BPI), an independent North American certifier of compostable material. BPI certification shows that Mirel base resins comply with the specifications established in the American Society for Testing and Materials standard ASTM D6400 for composting in a professionally managed composting facility.

## **Trends and Opportunities for Mirel**

### ***Branded Products***

The market for branded products and services with attributes of environmental responsibility and sustainability is an emerging business opportunity. We expect that by co-branding products that use Mirel, Telles and its customers will be able to jointly promote environmental responsibility.

We believe that producers are positioning products as environmentally responsible or superior to gain a competitive advantage as they believe consumer preferences are shifting. We believe the use of Mirel in branded products either directly or for packaging will facilitate and enhance customers' efforts to exploit this trend. For example, during 2008, we entered into an agreement with a subsidiary of Newell Rubbermaid, a global marketer of consumer and commercial products whose brands include Rubbermaid®, Calphalon®, and Paper Mate® to supply Mirel bioplastic injection molding grade resin.

### ***Regulated Markets***

Regulatory action, such as bans, taxes, subsidies, mandates and initiatives, to encourage substitution of renewable and sustainable materials for petroleum-based incumbents is increasing. Examples of this can be found in the following jurisdictions:

- Local jurisdictions within California, New York, Washington, Iowa, North Carolina, Connecticut, Alaska, and Hawaii have adopted legislation banning the use of non-biodegradable plastic bags or imposing significant taxes on them.
- Beginning in June 2008, China began banning shops from giving out free plastic bags.
- Australia, Bangladesh, Ireland, Italy, Germany, Belgium, Denmark, Israel, Taiwan and the Netherlands have banned or taken action to discourage the use of plastic bags.
- Many African nations including Tanzania, Zanzibar, Rwanda, and South Africa have banned the use of plastic bags.
- Mumbai, India, has also banned the use of plastic bags.

In the geographic segments where regulatory drivers exist, we expect that Mirel can meet requirements for biobased content or biodegradability that favor Mirel over conventional petroleum-based plastics. In addition, producers are now anticipating regulatory change and are initiating programs to introduce sustainable materials to their products prior to or in an attempt to forestall implementation of such regulation. We believe that as awareness of our practical and affordable alternative grows, the pace of regulatory change may accelerate.

**Market Segments for Mirel**

Although there are significant opportunities across many market segments, we are initially focusing on six market segments: agriculture/horticulture, compost and organic waste diversion bags, marine and aquatic, consumer products, business equipment and durable goods and general packaging. These markets have the strongest need for materials that are biobased and biodegradable either for branding value, because of regulatory requirements, or because biodegradability offers a useful property. To approach these market segments, we are conducting product and business development activities, including working with potential customers to determine their specific needs, and we have begun the process of qualifying our material for a variety of customer applications. As Mirel produced at the Commercial Manufacturing Facility becomes available in larger quantities, we expect that these activities will accelerate. We are actively developing customer prospects to qualify our products in the following market segments:

Segment	Examples of Application	
<i>Agricultural/Horticultural</i>	<ul style="list-style-type: none"> <li>• Agricultural film</li> <li>• Erosion control netting</li> <li>• Single season irrigation devices</li> </ul>	<ul style="list-style-type: none"> <li>• Erosion control stakes</li> <li>• Biodegradable plant pots</li> <li>• Fencing</li> </ul>
<i>Compost and Organic Waste Diversion Bags</i>	<ul style="list-style-type: none"> <li>• Industrial can liners</li> <li>• Kitchen compost bags</li> </ul>	<ul style="list-style-type: none"> <li>• Lawn and leaf bags</li> </ul>
<i>Marine and Aquatic</i>	<ul style="list-style-type: none"> <li>• Biodegradable water treatment devices</li> <li>• Fishing equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Marine disposables</li> </ul>
<i>Consumer Products</i>	<ul style="list-style-type: none"> <li>• Gift and credit cards</li> <li>• Cosmetic packaging</li> </ul>	<ul style="list-style-type: none"> <li>• Personal hygiene products</li> <li>• Short term use retail applications</li> </ul>
<i>Business Equipment and Durable Goods</i>	<ul style="list-style-type: none"> <li>• Hand-held devices</li> <li>• Components</li> </ul>	<ul style="list-style-type: none"> <li>• Housings</li> <li>• Trays</li> </ul>
<i>General Packaging</i>	<ul style="list-style-type: none"> <li>• Caps and closures</li> <li>• Thermoformed clamshells</li> </ul>	<ul style="list-style-type: none"> <li>• Stretch wrap</li> <li>• Foam</li> </ul>

***Agriculture/Horticulture***

The need for biodegradability is a major driver in this market. Applications such as agricultural film (mulch film, field film, bale wrap, green house film), sod netting, erosion control netting and fencing have a strong need for the biodegradability offered by Mirel. In the case of field and mulch agricultural film, Mirel will biodegrade naturally after use and can be tilled into the field after a growing season. This can avoid the costs associated with the labor of removing the film from the fields and the associated disposal costs. In horticulture, the use of Mirel can avoid the need, and cost, to remove plant pots when planting and the subsequent costs associated with disposal. As compared to existing bioplastics in the market, Mirel offers biodegradability, excellent toughness and strength, and long term shelf life prior to use. We do not believe that existing products provide both the robust performance in use combined with the biodegradability that Mirel offers.

***Compost and Organic Waste Diversion Bags***

Biodegradability is a major driver in this market. Applications such as industrial can liners, kitchen compost bags and organic lawn and leaf bags have a strong need for the biodegradability offered by Mirel. Composting is becoming more and more popular as a method for organic waste disposal. The use of Mirel allows both the industrial and consumer users to dispose of these wastes in a bag that is biodegradable in industrial composting as well as home composting.

***Marine and Aquatic***

Biodegradability is a major driver in this market. Studies have noted that the world's oceans show increasing levels of persistent plastic particles of a size ingestible by marine creatures at the bottom of the food chain. Larger plastic items are also accumulating in substantial quantities in certain parts of the ocean, and marine birds and mammals have been found dead from ingesting or getting tangled in plastic debris. Mirel allows brand owners the opportunity to offer a product that will biodegrade if released into the environment or in applications where marine degradation is a key attribute (e.g. erosion control).

***Consumer Products***

The need for both biobased materials and biodegradability are major drivers in this market. Brand owners are under significant pressure to offer environmentally responsible products to their customers. The use of Mirel offers producers the opportunity to position products as environmentally responsible or superior to petroleum-based plastic. As well, producers developing new products are being held more responsible for the end life of these products or components. We believe the use of Mirel in branded products either directly or for packaging will facilitate and enhance Telles' customers' efforts to exploit this trend.

***Business Equipment and Durable Goods***

The need for a biobased material is a major driver in this market. Like consumer product producers, producers of business equipment or durable goods are under significant pressure to become environmentally responsible when offering products including scientific labware, computer components and electronic devices such as cell phones, printers, personal digital assistants and MP3s to their customers. The use of Mirel offers producers the opportunity to demonstrate their commitment to utilizing renewable materials.

***General Packaging***

The need for both biobased materials and biodegradability are major drivers in these markets. Regulatory requirements are also a factor. Many plastic items, particularly single use items such as bottles and caps, cups, lids and straws, and grocery bags become litter in the environment where they can become a significant problem. Opportunity for the application of Mirel exists for packaging items such as shrink film for pallet wrap, foam packaging for shipping electronic devices and foam thermoformed packaging where expandable polystyrene is being banned through government regulation. Mirel offers a biobased and biodegradable substitute that may be more appealing to consumers.

***Marketing and Sales***

On behalf of Telles, we intend to sell Mirel into markets around the globe, with an initial focus on North America and Europe. In order to target markets in Europe Telles recently established Telles (Europe) B.V., a wholly owned subsidiary of Telles, in the Netherlands. Telles (Europe) B.V. will be used as a distributor to provide sales and service support. We intend to establish marketing and sales efforts either directly or through regional alliances with local firms in other parts of the world. We will also consider selected market development arrangements in certain discrete segments, such as fiber, where there may be advantages to working closely with a market leader in that segment.

Metabolix is leading the marketing and sales effort on behalf of Telles. Sales of Mirel are highly technical in nature. As a result, the Mirel marketing and sales team consists of individuals with extensive experience in the polymer industry and the development of value added specialty applications. Our expertise in polymer science combined with our familiarity with the properties of the Mirel family of bioplastics is essential to developing resin grades that meet specific customer requirements. In some

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cases, we may coordinate joint marketing and sales efforts with ADM, taking advantage of ADM's strong customer base. ADM is a world leader in agricultural processing and fermentation technology and is one of the world's largest processors of corn, soybeans, wheat and cocoa. ADM is also a leader in the production of ethanol and corn sweeteners.

It is our goal to establish customer relationships that will lead to purchase commitments for the 110 million pound annual design capacity of the Commercial Manufacturing Facility and then, ultimately, to expand the plant beyond its initial capacity. To that end, we have built a pipeline of customer projects in different applications to maximize our opportunities to fill the plant to capacity.

We have provided material to customer prospects for initial testing. Some customer prospects have progressed to evaluation of additional volumes of Mirel in larger scale product qualification trials and test marketing, which in turn may lead to more rapid product adoption and sales. In 2008, Heritage Bag Company successfully test marketed Mirel as a component for its compostable industrial can liners. During 2008, Ball Horticultural Company successfully test marketed pot liners composed of Mirel. Labcon North America successfully test marketed pipette racks composed of Mirel in 2008. During 2008 we signed an agreement with a subsidiary of Newell Rubbermaid, a global marketer of consumer and commercial products, to supply Mirel bioplastic injection molding grade resin. During October 2009 Pharamfilter BV, a bioenergy technology company based in Amsterdam, selected Mirel bioplastics for a suite of disposable products for hospital use. In March of 2009, Bioverse, a developer of natural products to assist bioremediation of commercial and residential water features, contracted to purchase injection molding-grade Mirel bioplastic resin to produce a biodegradable version of its AquaSphere PRO pond and lake treatment system for golf courses. Telles has established supply agreements with Heritage Plastics, Ball Horticultural Company and Newell Rubbermaid, among others.

### **Competition**

The plastics market is large, with many established players. The market has grown around the chemical processing of oil and natural gas, and is concentrated in the conventional, non-biodegradable petroleum-based segment.

Established companies in this segment include Dow Chemical, DuPont, BASF, Ineos, LyondellBasell, SABIC and Mitsubishi Chemical, among many others. The price of conventional petroleum-based plastic is volatile, as it is dependent on petroleum as a key manufacturing input. In addition, the non-biodegradability of conventional petroleum-based plastics makes them persistent in and harmful to the environment and creates significant waste.

A few companies, such as DuPont, Dow Chemical, Arkema, and Braskem have taken steps toward plastics based on renewable resources, and are commercializing plastics that use building blocks derived from renewable resources as components. These products are generally not biodegradable. Other producers of petroleum-based plastics, including BASF, Mitsubishi Chemical, and DuPont, now produce certain petrochemical grades that are biodegradable in industrial compost environments, but are otherwise persistent in the environment and are still subject to the volatility of oil and natural gas prices.

Our most comparable competitors are in the biodegradable, renewable resource based plastic segment, within which there are three distinct technologies: PHA, polylactic acid (PLA) and starch-based biodegradables. Just as a wide variety of different petroleum-based plastics now serve the needs of the market, we believe that these three product classes are more complementary than competitive. We believe that of these three product classes, Mirel offers the broadest range of properties and processing options, and will address the largest proportion of opportunities as an environmentally attractive yet functionally equivalent alternative to conventional petroleum-based plastics. Unlike PLA and most starch-based biodegradables, Mirel can:

- biodegrade in natural soil and water environments, including the marine environment,

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- biodegrade in industrial or home composts,
- remain functional in a wide range of temperature settings, and
- not break down in everyday use.

Other companies active in the PHA plastics segment include Kaneka, Tianan and a minor producer in Brazil. The key players in PLA and starch-based biodegradable plastics include NatureWorks, Mitsui Chemical, Toyota, Novamont and Stanelco.

<b>Biodegradability</b>	<b>Based on Petroleum</b>	<b>Based on Renewable Resources</b>
Biodegradable	Synthetic Biodegradable: <ul style="list-style-type: none"><li>• BASF (Ecoflex™)</li><li>• Dupont (Biomax™)</li><li>• ShowaDenka (Bionolle™)</li><li>• Mitsubishi Chemical</li></ul>	<i>PHA:</i> <ul style="list-style-type: none"><li>• Metabolix (Mirel™)</li><li>• Kaneka (PHBH)</li><li>• Tianan (PHBV)</li></ul> <i>PLA:</i> <ul style="list-style-type: none"><li>• NatureWorks (Ingeo™)</li><li>• Mitsui Chemical (Lacea™)</li><li>• Toyota</li></ul> <i>Starch-based:</i> <ul style="list-style-type: none"><li>• Novamont (Mater-Bi™)</li><li>• Stanelco</li></ul>
Non-Biodegradable	Conventional petroleum-based plastics	<ul style="list-style-type: none"><li>• DuPont (Sorona™ (~30% biobased))</li><li>• Dow Chemical (Soybean Polyurethanes)</li><li>• Arkema (Nylon 11)</li><li>• Braskem (HDPE)</li></ul>

### **Regulatory Requirements**

Some applications for which Mirel may be suitable, such as food packaging, plastic-coated paper cups, and lids for disposable cups, involve food contact, which is regulated by the U.S. Food and Drug Administration, the (FDA). The FDA process for food contact requires the submittal of a dossier, which is made up of a number of extraction studies conducted under specific guidelines. After submittal of a dossier, the FDA has 120 days to ask for additional testing or to modify the submitted approach. Once this time period has elapsed, if there are no objections from the FDA, the manufacturer is free to pursue the submitted food contact segments.

In October 2009, we submitted our dossier to the FDA for food contact notification. Our dossier addressed applications for Mirel for all food types and conditions, except alcohol, ranging from frozen food contact up to contact with boiling water. We have responded to two sets of comments by the FDA, and we believe that we can satisfy any additional requests for commentary and data as this process continues. While it cannot be certain, we expect to be selling product for food contact applications during the current fiscal year, and we are working with select food contact customers in product prototyping and taste and sensory testing. However, our entry strategy for the Mirel market is not designed around food contact applications and does not depend upon it, as we do not have control over many factors that impact the overall timing of the FDA review process.

### **Research & Development**

We have a long standing and ongoing research and development program that is designed to exploit our integrated systems approach to industrial biotechnology. We believe that the technical

challenges of successfully deploying biotechnology in industrial settings are high and that systems developed in an integrated and comprehensive environment will generate the optimum possible results and provide us with a competitive advantage. Furthermore, we believe fully developed, commercially viable processes will expand our financing options and where appropriate command higher values from potential partners than individual components or technologies.

The primary goals of our research and development program are to:

- lower the cost and improve the productivity of producing Mirel by microbial fermentation;
- expand the performance of Mirel in both polymer conversion and in use;
- expand the market applications into which Mirel can be sold;
- introduce a plant-based production system that can dramatically transform the markets for plastics and energy;
- develop new opportunities to produce plastics, chemicals and energy in either fermentation or plant based systems; and
- develop and acquire competitive intellectual property and know-how in biobased plastics, chemicals and energy that defines us as the leader in the field.

As of December 31, 2009, we employed 69 personnel conducting research and development for our programs. Among our research staff, 29 hold Ph.D.s and 38 hold masters' or bachelors' degrees in their respective disciplines. Our staff has expertise in the following areas: microbial genetics, bioinformatics, metabolic engineering, systems biology, plant genetic engineering, fermentation process engineering, chemical engineering and polymer science and engineering.

#### **Research Programs**

We believe Mirel is the first of several attractive opportunities we will pursue to meet the world's plastic, chemical and energy needs through the biological conversion of renewable and sustainable agricultural feedstocks.

#### **Microbial Fermentation**

We have ongoing strain development efforts to develop microbes that can produce higher yields of Mirel at lower cost than our current strains. We have identified specific projects that we believe will allow us to approach the maximum theoretical yield and productivity of these systems. In addition, we are engaged in strain development work to facilitate production of other compositions, including second generation polymers to allow us to extend the range of market applications we can address. This work will be combined with our ongoing product development effort, which is broadening the range of formulations we can create.

#### ***Integrated Bio-Engineered Chemicals Program***

During 2007, we received an Advanced Technology Program (ATP) award from the U.S. Department of Commerce's National Institute of Standards and Technology (NIST). The \$2 million award was applied towards the development of a commercially viable process for producing biobased chemicals from renewable agricultural products. The ATP program provided cost-shared funding to industry led teams to help advance research and development projects with the potential to spark important, broad-based economic or social benefits for the United States. Our award funded our integrated bio-engineered chemicals (IBEC) program, to develop sustainable solutions for widely-used C4 industrial chemicals. The program was designed to create a class of biobased routes for producing important industrial chemical intermediates, reducing our dependence on fossil-based feedstocks and providing the nation with competitive advantages in polymers, chemicals and agriculture, all while reducing adverse environmental impacts.

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Our IBEC project resulted in the successful bio-engineering of microbes to produce a range of PHA polymers through the fermentation of plant-derived sugars. The produced polymers will then be converted into a variety of four-carbon (C4) industrial chemicals. In 2008, we achieved proof of principle for all scientific goals in this project. During 2009, we successfully developed a scalable industrial production microbe and achieved all of the program milestones at the conclusion of the project in October 2009.

Today, C4 chemicals are produced almost entirely from fossil-based hydrocarbons such as natural gas, oil or coal and are used in products such as auto parts, spandex, polyurethanes, engineering resins and solvents. Global demand for C4 industrial chemicals is estimated at 2.5 billion pounds annually, and has been growing at a rate of 4 to 5 percent a year. During 2009, Metabolix conducted a detailed review of the C4 external economic and competitive landscape, resulting in the specialty C4 chemicals segment being prioritized for commercialization. Discussions with potential partners were initiated with the goal to commence scale-up activities during 2010.

### **Biorefinery Programs**

We are developing a technology to produce plastics directly in plants, including switchgrass, sugarcane and oilseed. This effort builds on our success in creating high productivity microbial biofactories and may enable the production of biobased plastics with economics that are as favorable as, or more favorable than, general purpose commodity plastics such as polyethylene, polypropylene and polystyrene. We have successfully achieved the milestone of significant levels of polymer production in switchgrass and are now working to increase production to levels that would be commercially viable. We believe we can engineer a system that co-produces plastics along with biomass for conversion to energy (such as steam, electricity or biofuels such as ethanol or biodiesel). This concept, called a "biomass biorefinery," is based on the co-production of energy and higher value biobased plastic. It is analogous to today's energy/petrochemical industry where synthetic plastics are derivative value-adding products along with energy produced from petroleum and natural gas. We believe the co-production of biobased plastics with energy in one system will offer superior economic value and efficiency to a single product system. We have collaborated with the Donald Danforth Plant Science Center and the Australian Cooperative Research Centre to further our research in this area. Our goal is to reach field trial demonstrations within the next two years.

We believe we are a leader in the science and technology related to the transformation of several potentially important industrial biorefinery crops, including switchgrass. Precise insertion of novel pathways in plants is challenging due to the need for and the complexity of introducing multiple foreign genes and the lengthy time required for the cross-breeding of plant generations having new gene systems. We have developed several proprietary approaches to more efficiently introduce complex, multi-gene, multi-step pathways into switchgrass and we expect that these approaches will have value in other areas in addition to production of plastics.

We believe that our biomass biorefinery program offers the potential to improve the economics of producing not only biobased plastics, but also bioenergy. The effect of this program could nearly double the value per acre of crop harvested. We expect that polymer production economics can be improved because the manufacture of the material will take place within the plant. With our current fermentation process, starch, a precursor to our feedstock (i.e., corn sugar), is produced within the plant. Considerable capital and operating costs are incurred extracting starch, converting it to corn sugar feedstock and then fermenting that feedstock to produce microbial cells containing plastic, which is then extracted to produce Mirel. Through direct production in switchgrass, oilseeds or other crops, we can eliminate the capital required for the fermentation facility and those conversion costs and potentially achieve production economics comparable to those of general agricultural products, which are inexpensive. It is also commonplace within both the agricultural and the energy industries to produce a variety of co-products from raw materials to maximize value. As with a barrel of oil that is

converted to both gasoline and plastic, or a bushel of corn that is converted to industrial starches, animal feed, sweetener and other products, we believe that a plant variety that co-produces both plastics and energy can have more value than one that does not.

While the cost of producing plastics in plant crops may be considerably lower than the cost of producing these materials by fermentation, we believe the introduction of plant based materials can significantly expand the market for fermentation based materials. The scale and complexity of agriculturally producing plastics will limit the grades of material produced to just a few. Conversely, fermentation based manufacturing allows many grades to be produced with a variety of property sets. Low cost plant based material could be blended with fermentation material to balance between cost and performance, or be sold unblended for specific applications.

### ***Switchgrass***

Our first program focuses on switchgrass, a commercially and ecologically attractive, non-food energy crop that is indigenous to North America. Switchgrass is an attractive biomass to energy crop that is generally considered to be a leading candidate for cellulose-derived production of ethanol and other biofuels. It is a high density perennial crop that can grow on marginal land and does not require substantial inputs in terms of water or fertilization. It has the capability of sequestering significant amounts of carbon dioxide from the atmosphere in its root systems.

We have already achieved several significant milestones in this program and have published these results in *Plant Biotechnology Journal*, a peer reviewed academic journal, reporting the achievement of over 3% bioplastic in switchgrass leaf and over 1% overall in the plant. Our research is currently focused on increasing plastic production levels to amounts we believe would be commercially viable, which we have stated is around 7% of the total weight of the plant.

### ***Sugarcane***

We are also developing sugarcane for co-production of biobased and biodegradable plastic within the leaves and stems of that plant. Sugarcane is currently the premier biomass crop for biofuels, and we believe it can be developed to produce an advanced biorefinery feedstock for the production of bioplastics, chemicals and energy, significantly expanding our global reach. In 2007, we entered into a research collaboration with Australia's Cooperative Research Centre for Sugar Industry Innovation through Biotechnology ("CRC SIIB") to develop sugarcane strains for the production of plastics. While switchgrass is well suited for the North American climate, sugarcane will be ideal for more tropical climate zones. Biotechnology recovery operations could be added onto an existing sugar mill to take advantage of the harvesting, processing and co-generation facilities already in place. Together with the CRC SIIB we have achieved a bioplastic content level of 3.5% in sugarcane leaves.

### ***Oilseeds***

Industrial oilseeds represent the third crop system to which we are applying our patented technology. We are developing an advanced industrial oilseed crop for co-production of bioplastics along with vegetable oil. Industrial oilseed crops are currently grown primarily for conversion of the oil to products for non-food applications, such as biodiesel fuel or oleochemicals. By co-producing bioplastics in an industrial oilseed, the overall potential economic value of oilseed crop production is increased. Here again, we hope to tap into the existing infrastructure for harvesting, storing and transporting oilseeds.



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In January 2008, we established a research collaboration with noted oilseed experts at the Donald Danforth Plant Science Center ("Danforth Center"), a leading not-for-profit research institute in St. Louis, Missouri. This collaboration was supported financially by a two year, \$1.14 million grant from the Missouri Life Sciences Trust Fund to the Danforth Center. Metabolix assembled a team of scientists in St. Louis to work closely with the Danforth Center's principal investigators with the purpose of achieving technical goals for stable production of biobased plastics directly in oilseed crops. Combining the Danforth Center's extensive experience in oilseed biochemistry and genetic engineering with our patented technologies allowed us to make significant progress towards these goals.

During 2009 we continued to closely integrate the oilseed development at both the Danforth and Metabolix labs and continued to make substantial progress towards technical goals aimed at developing a commercial industrial oilseed crop for the production of PHAs. Metabolix is currently evaluating the overall resources required to accelerate the oilseed development efforts during 2010.

### **Our Technology and Product Development Process**

We believe we have one of the most advanced capabilities to perform metabolic pathway engineering in the world and that we are skilled in our ability to integrate the biotechnology we develop into large scale industrial production processes. We believe that we have unprecedented capabilities with respect to the metabolic pathways involved in the production of a wide range of bioplastic monomers and the ability to polymerize and accumulate these bioplastics inside living cells. We believe that our advanced capabilities will allow us to:

- design and engineer living organisms to perform a series of chemical reactions that convert a feedstock to an end product in a highly efficient and reliable manner;
- integrate that organism into a reliable, large scale industrial fermentation process;
- develop highly efficient recovery technology for the product;
- tailor our end product from that process to suit our customers' needs; and
- develop new applications and commercial opportunities for these products.

### ***Biology and Genetic Engineering***

While most biotechnology products today involve identifying a single gene to produce one protein, we have identified and chromosomally inserted a series of genes to produce several proteins and have done so in such a way that they are expressed to execute the right reactions at the right times. This work is at the forefront of a scientific discipline referred to as "Synthetic Biology" which has become the focus of intense research and design activities. There have been many new entrants, both academic and venture-backed start-up companies, in this general field primarily targeting biofuels, either advanced cellulosic ethanol or next generation technologies. We believe that we have unique capabilities based on seventeen years of development taking early stage gene/pathway discovery through the entire value delivery chain to a commercially viable technology and business. In addition, we have developed core competencies in plant transformation and the development of advanced multigene expression technologies for introducing multiple traits into biomass plant crops.

### ***Industrial Fermentation Process Engineering***

We have tightly integrated our fermentation scale-up research capabilities with our genetic engineering capabilities to create a feedback loop where data from fermentation experiments can readily influence microbial design and where microbial engineering approaches can guide the fermentation group to structure the optimal protocols (recipes) for running fermentations. Based on

this technology we have demonstrated the ability to produce a range of different polymers on a common fermentation platform.

***Chemical Process Engineering***

The third element of our technology and product development process involves process chemistry and chemical engineering to separate the polymer from the biological cell material once fermentation is complete. We have a dedicated team that has developed a proprietary process for Mirel recovery at the industrial scale. We have invented a process that achieves a high level of purity without damaging the polymer and that we believe can be implemented cost effectively on a commercial scale. We have successfully demonstrated our ability to efficiently isolate the range of polymers necessary to meet and expand our range of target applications. These polymers can be routinely produced free from cell debris and processed into pellets.

***Polymer Science and Product Development***

The final elements of our product development involve tailoring the polymer to provide the product properties and meet the processing requirements for specific customer applications and then compounding that material for delivery to customers. Our product development team has considerable expertise in polymer science and to date has advanced the development of formulations for injection molding, blown and cast film, sheet, and thermoforming. We will continue to work with our customers to optimize our formulations to conform to their commercial specifications. During 2009, we developed advanced formulation and processing technology for thermoforming, sheet, film and injection molding and moved blow molding and foam applications beyond the proof of concept stage. We will continue to develop these application areas as Telles moves into commercialization.

In sum, we have successfully integrated capabilities in biology, genetics, fermentation process engineering, chemical engineering and polymer science. We believe this integrated set of capabilities will be a source of competitive advantage. These same capabilities are being applied to our plant crop programs, where we intend to develop an industrial system to co-produce bioplastics with cost advantaged biomass for bioenergy, and to our integrated bio-engineered chemicals program. We believe our capabilities can also be applied successfully to other biobased plastics, chemicals and energy projects.

**Intellectual Property**

Our continued success depends in large part on our proprietary technology. We rely on a combination of patent, copyright, trademark and trade secret laws, as well as confidentiality agreements, to establish and protect our proprietary rights.

We own approximately 435 issued patents and approximately 135 patent applications worldwide, and we have licensed from third parties approximately 75 issued patents and patent applications worldwide. These patents cover, among other things, the fundamental biotechnology needed to produce Mirel as well as compositions, processes and derived products. The licensed patents and patent applications include patents covering our core technology that are owned by Massachusetts Institute of Technology (MIT) and exclusively licensed to us. Under the MIT licensing agreement, we currently pay annual license fees. In addition, under this licensing agreement, we are obligated to pay royalties on sublicensing revenue and sales of products, if any, covered by the licensed patents.

Our patents are directed to compositions of polymers, genes, vectors, expression systems in plants and microbes, devices, coatings, films, as well as methods of manufacture and use. The terms of such patents are set to expire at various times between 2010 and 2026.

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Under our Commercial Alliance Agreement with ADM, Telles has an exclusive license under our intellectual property for the manufacture and sale of Mirel. Any newly developed intellectual property that is funded by Telles will be jointly owned by ADM and us. Intellectual property that we develop or acquire outside the alliance may be subject to certain Telles rights to the extent that it pertains to PHA materials or PHA-related materials. However, the agreement does not limit our right to develop, manufacture or sell biobased plastics, including PHAs, produced through plants such as switchgrass, sugarcane or oilseeds independent of the alliance.

We will continue to file and prosecute patent applications when and where appropriate to attempt to protect our rights in our proprietary technologies. It is possible that our current patents, or patents which we may later acquire, may be successfully challenged or invalidated in whole or in part. It is also possible that we may not obtain issued patents for our pending patent applications or other inventions we seek to protect. In that regard, we sometimes permit certain intellectual property to lapse or go abandoned under appropriate circumstances, and due to uncertainties inherent in prosecuting patent applications, sometimes patent applications are rejected and we subsequently abandon them. It is also possible that we may develop proprietary products or technologies in the future that are not patentable or that the patents of others will limit or altogether preclude our ability to do business. In addition, any patent issued to us may not provide us with any competitive advantages, in which event we may abandon such patent.

Our registered U.S. trademarks include *Metabolix* and *Biopol*, and Telles has U.S. registrations for *Mirel* and the Mirel heart-leaf design. Additional U.S. registration applications for *Metabolix*, *Bio-industrial Evolution*, the Metabolix four-leaf design, *Telles*, *Mirel* and the Mirel heart-leaf design are pending. These marks and certain other trademarks have been registered in selected foreign countries.

Our means of protecting our proprietary rights may not be adequate, and our competitors may independently develop technology that is similar to ours. Legal protections afford only limited protection for our technology. The laws of many countries do not protect our proprietary rights to as great an extent as do the laws of the United States. Despite our efforts to protect our proprietary rights, unauthorized parties have in the past attempted, and may in the future attempt, to copy aspects of our products or to obtain and use information that we regard as proprietary. Third parties may also design around our proprietary rights, which may render our protected products less valuable, if the design-around is favorably received in the marketplace. In addition, if any of our products or the technology underlying our products is covered by third-party patents or other intellectual property rights, we could be subject to various legal actions. We cannot assure you that our products do not infringe patents held by others or that they will not in the future.

Litigation may be necessary to enforce our intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement or invalidity, misappropriation, or other claims. Any such litigation could result in substantial costs and diversion of our resources. Moreover, any settlement of or adverse judgment resulting from such litigation could require us to obtain a license to continue to use the technology that is the subject of the claim, or otherwise restrict or prohibit our use of the technology. Any required licenses may not be available to us on acceptable terms, if at all.

### **Employees**

As of December 31, 2009, we had 107 full-time employees. Of those employees, 69 were in research and development, 9 were in marketing and 29 in general and administration. Most of our employees are located in Massachusetts. None of our employees are subject to a collective bargaining agreement. We consider our relationships with our employees to be good.

## Corporate and Investor Information

Our company was incorporated in Massachusetts in June 1992 under the name Metabolix, Inc. In September 1998, we reincorporated in Delaware. Financial and other information about our company is available on our website (<http://www.metabolix.com>). The information on our website is not incorporated by reference into this annual report on Form 10-K and should not be considered to be part of this annual report on Form 10-K. We make available on our website, free of charge, copies of our annual report 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 amended (the "Exchange Act") as soon as reasonably practicable after filing such material electronically or otherwise furnishing it to the Securities and Exchange Commission.

### ITEM 1A. RISK FACTORS

Our operations and financial results are subject to various risks and uncertainties that could have a materially adverse affect on our business, financial condition, results of operations and the trading price of our common stock.

#### *Risks Relating to Our Business*

##### **We may not be able to successfully manufacture Mirel at commercial scale in a timely or economical manner.**

ADM's Commercial Manufacturing Facility for the production of Mirel (referred to as the Commercial Manufacturing Facility) has only recently begun operations. Previously, Mirel was produced in relatively small quantities, at pre-commercial scale, for use in marketing activities, including conversion into end-products for test marketing by our customers. The current and anticipated methods for manufacturing biobased plastics, both by fermentation and in crops, and the anticipated methods for producing chemicals and energy, are highly complex processes in which a variety of difficulties may arise. We may not be able to resolve any such difficulties in a timely or cost effective fashion, if at all. We cannot assure you that we will be able to successfully manufacture Mirel at a commercial scale in a timely or economical manner or that the quality of the commercial product will be acceptable on a consistent basis.

Since commercial manufacturing of Mirel is still in its early stages, manufacturing costs at such a facility are uncertain and may ultimately be higher than we expect. While we believe that manufacturing costs will be reduced over time as we gain manufacturing know-how and improve our technology, we cannot be sure that we can manufacture Mirel in an economical manner. If ADM fails to develop adequate manufacturing capacity and expertise or fails to manufacture Mirel economically on a commercial scale or in commercial volumes, or if Telles fails to continue to contract for compounding services on acceptable terms, the commercialization of Mirel and our business, financial condition and results of operations will be materially adversely affected.

##### **We may not be successful in the development of our biomass biorefinery platform or our bio-engineered chemicals program.**

In addition to our development and scale-up work to produce Mirel through fermentation, we are also at an early stage of developing the technology and processes to produce biobased plastics in plant crops, including switchgrass, sugar cane and oilseed, and we are engaged in research applying our core capabilities in microbial engineering and plant transformation to develop biological routes to other chemicals and chemical intermediates. We are currently focused on the genetic and process engineering required in connection with such programs. Because we will be funding much, or perhaps all, of the development of such programs, there is a risk that we may not be able to continue to fund such

programs to completion or to provide the support necessary to distribute, market and sell resulting products, if any, on a worldwide basis. These development programs will consume substantial resources.

To date our efforts to produce biobased plastics in crops have focused primarily on the genetic engineering required to cause the crops to aggregate plastic in the plant mass during the life cycle of the plant. We have not yet achieved a high enough concentration of plastic in commercial crops to make the current technology and process economically feasible at a commercial scale. If we are able to complete the genetic engineering work that leads to such aggregation at acceptable levels, we will also need to perform additional process engineering so that plastic can be recovered from the harvested crops, processed and formulated as required to constitute a marketable product. Such engineering work may not be successful and we may not have the financial resources to fund such work.

Our biomass biorefinery and chemicals development efforts are at a very early stage. The technological challenges associated with these programs are extraordinary and we may not be able to overcome these challenges. We will be required to invest a significant amount over a long period of time to complete such development work, if it can be completed at all.

We cannot predict the costs of producing biobased plastics in plant crops or producing chemicals through biological routes, given the stage of development of these programs. The anticipated methods for manufacturing biobased plastics in crops, and for producing chemicals and energy, are highly complex processes in which a variety of difficulties may arise and there are extensive regulatory requirements to be met. Given these uncertainties, we may not be able to successfully produce biobased plastics in plant crops or biosourced chemicals in an economical manner.

**If initial sales of Mirel are slower than anticipated, our financial results will be negatively affected.**

Telles will not begin to pay us royalties on sales of Mirel or reimburse us for the cost of services provided to Telles until the achievement of a milestone referred to in the Commercial Alliance Agreement as "First Commercial Sale." Achievement of this milestone requires the sale by Telles to third parties of at least one million pounds of Mirel manufactured at the Commercial Manufacturing Facility. Sales must meet certain criteria, including a minimum order size, product must be accepted by the customers in accordance with the terms of their contracts, and payment must be received from the customer in order for such sales to contribute towards the First Commercial Sale milestone. Generally, new product applications require a long lead time and sufficient quantities of polymer for development and qualification before customers enter into sales commitments. If there are difficulties or delays in the start-up of the Commercial Manufacturing Facility or other unforeseen issues that affect the ramp-up of commercial sales, the cost of our Telles support activities will almost certainly increase. We may incur additional unreimbursed pilot manufacturing, product development, sales and marketing costs until the Commercial Phase of the alliance begins, and the revenue from sales, if any, of Mirel and the distribution of profits, if any, to us will be delayed.

**We may not be able to develop manufacturing capacity sufficient to meet demand in an economical manner or at all.**

ADM has completed construction of the initial phase of the Commercial Manufacturing Facility. We cannot assure you that ADM will provide the necessary funds to finance the remaining phases of construction or any improvements to or expansion of the Commercial Manufacturing Facility, or that we will be able to develop this manufacturing infrastructure in a timely or economical manner, or at all. ADM could experience financial or other setbacks unrelated to our collaboration that could, nevertheless, adversely affect us. If the Commercial Manufacturing Facility is not constructed to its full design capacity of 110 million pounds, or does not achieve that capacity in actual operations, or if construction to full capacity is not completed in a timely manner, Mirel may not reach its full market potential because Telles may not be able to meet market demand for Mirel, and because Mirel

manufacturing costs may not be economical. Also, the expansion of a commercial-scale manufacturing facility is complex and expensive. If demand for Mirel increases beyond the scope of the Commercial Manufacturing Facility being built to serve Telles, we may incur significant expenses in the expansion and/or construction of manufacturing facilities and increases in personnel in order to increase manufacturing capacity.

**We may not achieve market acceptance of our products.**

Telles currently has only limited customer commitments for commercial quantities of Mirel. Market acceptance of Mirel and our future products will depend on numerous factors, many of which are outside of our control, including among others:

- public acceptance of such products;
- ability to produce products of consistent quality that offer functionality comparable or superior to existing or new polymer products;
- our ability to produce products fit for their intended purpose;
- our ability to obtain necessary regulatory approvals for our products;
- the speed at which potential customers qualify Mirel for use in their products;
- our ability to meet customer demand for products with a favorable greenhouse gas profile;
- pricing of our products compared to competitive products, including petroleum-based plastics;
- the strategic reaction of companies that market competitive products;
- our reliance on third parties who support or control distribution channels; and
- general market conditions.

Prospective customers are currently evaluating and performing tests on Mirel prior to making any large-scale purchase decisions. We may not be able to successfully demonstrate that our plastics have properties comparable or superior to those of environmentally sustainable competitors or similar to conventional petroleum-based plastics. There can be no assurance that products based on our technologies will be perceived as being comparable or superior to existing products or new products being developed by competing companies or that such products will otherwise be accepted by consumers. The market may not be willing to support premium prices to purchase biobased and biodegradable plastics. If there is not broad market acceptance of our products, we may not generate significant revenues. Generally, new product applications require a long lead time and sufficient quantities of polymer for development and qualification before customers enter into sales commitments. Delays in the availability of material for product development, compounding scale-up and marketing activities could delay or slow the ramp-up of commercial sales from the Commercial Manufacturing Facility. If the start of the Commercial Phase of the alliance is delayed as a result of such delays or for other reasons, we may incur additional unreimbursed product development and sales and marketing costs until the Commercial Phase of the alliance begins. In addition, if such delays occur, or if we are unable to obtain the anticipated premium pricing for Mirel, there could be a material adverse effect on the timing of the distribution of Telles profits, if any, to us.

**We may not be successful in the development of commercial formulations of Mirel.**

Mirel can be produced in a large number of different formulations. Each formulation results in a material that has different performance attributes, such as flexibility, hardness or clarity. As such, different formulations will have utility in different commercial applications. Formulation development is a time-consuming and expensive activity. The development of new formulations requires significant and

lengthy product development efforts, including planning, designing, developing and testing at the technological, product and manufacturing-process levels. Although there are many potential applications for Mirel, our resource constraints require us to focus on specific formulations and to forgo other opportunities. We expect that one or more of the potential formulations we have developed or may in the future choose to develop will not be technologically feasible or will not achieve commercial acceptance, and we cannot predict which, if any, of our formulations we will successfully develop or commercialize.

**We have limited marketing and sales experience and capabilities, which may make the commercialization of our products difficult.**

We currently have limited marketing and sales experience and capabilities and virtually no distribution experience or capabilities. We will, in some instances, rely significantly on sales, marketing and distribution arrangements with our collaborative partners and other third parties. Our future revenues will be materially dependent upon the success of the efforts of these third parties and our ability to augment our own resources by identifying and hiring new employees. If we are unable to develop or obtain access to sales and marketing expertise, sales of our products, if any, may be adversely affected.

**We rely heavily on ADM and may rely heavily on future collaborative partners.**

We entered into a strategic alliance with ADM to commercialize our first technology platform, and we may enter into strategic partnerships with other corporations:

- to provide capital, equipment and facilities,
- to provide expertise in performing certain manufacturing and logistical activities,
- to provide funding for research and development programs, product development programs and commercialization activities,
- to provide access to raw materials, and
- to support or provide sales and marketing services.

We may not be successful in establishing or maintaining suitable partnerships to develop and commercialize our current and future research and development programs. Failure to make or maintain these arrangements or a delay or failure in a collaborative partner's performance under any such arrangements would have a materially adverse affect on our business and financial condition.

The arrangement with ADM is, and arrangements with future collaborative partners may be, critical to our success in manufacturing our products and selling such products profitably. ADM and, we anticipate, our other future collaborative partners, will be permitted by contract to terminate their agreements with us for no reason and on limited notice. We and ADM have the ability to terminate the Commercial Alliance Agreement with 30 days notice if, based upon a change in circumstances beyond the reasonable control of the terminating party, the projected financial return from the commercial alliance is deemed by the terminating party to be either too uncertain or inadequate. We and ADM also have the ability to terminate the Commercial Alliance Agreement with 90 days notice in the case of a breach by the other party.

We cannot control our collaborative partners' performance or the resources they devote to our programs. We may not always agree with our partners nor will we have control of our partners' activities on behalf of any alliance. As a result of these disagreements, the performance of our programs may be adversely affected, programs may be delayed or terminated, or we may have to use funds, personnel, equipment, facilities and other resources that we have not budgeted to undertake certain activities on our own. Performance issues, program delay or termination or unbudgeted use of our resources may have a material adverse effect on our business and financial condition.

Disputes may arise between us and a collaborative partner, including possible disputes regarding the ownership of technology and other intellectual property developed during a collaboration or other issues arising out of the collaborative agreements. Such a dispute could delay the program on which we are working or could prevent us from obtaining the right to commercially exploit such developments. It could also result in expensive arbitration or litigation, which may not be resolved in our favor. Our collaborative partners could merge with or be acquired by another company or experience financial or other setbacks unrelated to our collaboration that could, nevertheless, adversely affect us.

**Our success will be influenced by the price of petroleum, the primary ingredient in conventional petroleum-based plastics, relative to corn sugar, the primary ingredient in Mirel.**

Our success will be influenced by the cost of Mirel relative to petroleum-based plastics. The cost of petroleum-based plastic is in part based on the price of petroleum. Mirel is primarily manufactured using corn sugar, an agricultural feedstock. ADM currently supplies all required agricultural feedstock as part of our strategic alliance. If the price of corn or corn sugar were to dramatically increase or if the price of petroleum decreases, Mirel may be less competitive relative to petroleum-based plastics. While we expect to be able to command a premium price for our environmentally sustainable products, a material decrease in the cost of conventional petroleum-based plastics may require a reduction in the prices of our products for them to remain attractive in the marketplace or reduce the size of our addressable market.

**Our future profitability is uncertain, and we have a limited operating history on which you can base your evaluation of our business.**

We have had net operating losses since being founded in 1992. At December 31, 2009, our accumulated deficit was approximately \$168 million. Since 1992, we have been engaged solely in research and development and other pre-commercial and early-stage commercial activities. As a part of our strategic alliance, ADM Polymer is constructing the commercial scale Commercial Manufacturing Facility for Mirel. The initial phase of construction of the Commercial Manufacturing Facility was only recently completed, and we expect that it will require an additional period of time to ramp up production and sales. Until such time, Telles will not have significant revenues from sales of Mirel. No Telles profits will be distributed to us until ADM's cost of constructing the Commercial Manufacturing Facility and any negative net cash flow of Telles funded by ADM have been returned to ADM. Because we have a limited history of commercial operations and we operate in a rapidly evolving industry, we cannot be certain that we will generate sufficient revenue to operate our business and become profitable.

Our product revenue will be dependent on the successful completion of the scale-up and commercialization of Mirel through our strategic alliance with ADM, and other future products through other partnerships or joint ventures, if any, with third parties and separately for our own account. In addition, if we are unable to develop, commercialize and further advance technologies relating to the production of biobased plastics in crops and chemicals, or if sales of Mirel or such other products are not significant, we could have significant losses in the future due to ongoing expenses to perform research and product development and our inability to obtain additional research and development funding in connection with such products.

In addition, the amount we spend will impact our ability to become profitable and this will depend, in part, on:

- the progress of our research and development programs for the production of biobased plastics in crops and for other chemical and chemical intermediate products;
- the cost of building, operating and maintaining manufacturing and research facilities;



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- the number of products that we attempt to develop;
- the time and expense required to prosecute, enforce and/or challenge patent and other intellectual property rights;
- how competing technological and market developments affect our proposed products; and
- the cost of obtaining licenses required to use technology owned by others for proprietary products and otherwise.

We may not achieve any or all of these goals and, thus, we cannot provide assurances that we will ever be profitable or achieve significant revenues. If we fail to achieve profitability or significant revenues, the market price of our common stock will likely decrease.

**We may need to secure additional funding and may be unable to raise additional capital on favorable terms or at all.**

We have consumed substantial amounts of capital since our inception in 1992 for our research and development activities. Although we believe our unrestricted cash, cash equivalents and short-term investments of approximately \$92 million as of December 31, 2009, will be sufficient to fund our anticipated cash requirements for at least the next 24 months, we may require significant additional financing in the future to fund our operations. We cannot assure you that additional financing will be available on terms acceptable to us, or at all. Until we can generate significant continuing revenues, we expect to satisfy our future cash needs through the use of existing cash resources and through strategic collaborations, governmental research grants, and/or by licensing all or a portion of our programs or technology. We may also seek additional funds through private or public sales of our securities, or debt financings. If funds are not available, we may be required to delay, reduce the scope of, or eliminate one or more of our research or development programs or our commercialization efforts. Further, additional funding may significantly dilute existing stockholders.

**If we lose key personnel or are unable to attract and retain necessary talent, we may be unable to develop or commercialize our products under development.**

We are highly dependent on our key technical and scientific personnel, including Dr. Oliver Peoples, our Chief Scientific Officer. Dr. Peoples possesses unique information related to our research and technology. Dr. Peoples is one of our founders and has led and directed many of our scientific research and development programs. Dr. Peoples has such particular knowledge in the research, development and intellectual property aspects in connection with our technology platforms, that in the case of the loss of his services we may be unable to readily find a suitable replacement with comparable knowledge and experience necessary to further our research and development programs. The loss of key personnel with know-how related to our manufacturing technology may also adversely impact the achievement of our objectives. Our success depends largely upon the continued service of our management and scientific staff and our ability to attract, retain and motivate highly skilled technical, scientific, management, and marketing and sales personnel. Because of the unique talents and experience of many of our scientific, engineering and technical staff, competition for our personnel is intense. The loss of key personnel or our inability to hire and retain personnel who have required expertise and skills could have a materially adverse affect on our research and development efforts and our business.

**We may not be able to obtain rights to intellectual property developed by others using our information and technology, which could limit our ability to compete.**

We enter into confidentiality and intellectual property assignment agreements with our employees, consultants, outside scientific collaborators, and other advisors. These agreements generally provide that

inventions conceived by that party in the course of rendering services to us will be our exclusive property or that we will have the option to license such rights. We also enter into material transfer agreements with certain potential customers and vendors, prohibiting the other party from disclosing or filing a patent that discloses certain results of their evaluation of our developmental materials. However, these agreements may not be honored and may not effectively assign intellectual property rights to us. Enforcing a claim that a party illegally obtained intellectual property rights is difficult, expensive and time consuming and the outcome is unpredictable. The failure to obtain such rights for Metabolix or to prevent others from obtaining such rights could adversely affect our competitive position.

**Intellectual property protection for our products is important and uncertain.**

Our commercial success will depend in part on our obtaining and maintaining patent, trade secret and trademark protection of our technologies in the United States and other jurisdictions, as well as successfully enforcing this intellectual property and defending this intellectual property against third-party challenges. We will only be able to protect our technologies from unauthorized use by third parties by keeping them as trade secrets or to the extent that valid and enforceable intellectual property protections, such as patents, cover them. In particular, we place considerable emphasis on obtaining patent protection for significant new technologies, products and processes in the United States and in foreign jurisdictions where we plan to use such technologies. Legal means may afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. Foreign jurisdictions may not afford the same protections as U.S. law, and we cannot ensure that foreign patent applications will have the same scope of the U.S. patents.

Our patent position involves complex legal and factual questions. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. For example:

- we or our licensors might not have been the first to make the inventions covered by each of our pending patent applications and issued patents;
- we or our licensors might not have been the first to file patent applications for these inventions;
- others may independently develop similar or alternative technologies not encompassed by our patents;
- our issued patents and issued patents of our licensors may not provide us with any competitive advantages, or may be challenged and invalidated by third parties; and
- we may not develop additional proprietary technologies that are patentable.

Patents may not be issued for any pending or future pending patent applications owned by or licensed to us, and claims allowed under any issued patent or future issued patent owned or licensed by us may not be valid or sufficiently broad to protect our technologies. Moreover, we may be unable to protect certain of our intellectual property in the United States or in foreign countries. Any issued patents owned by or licensed to us now or in the future may be challenged, invalidated, or circumvented, and the rights under such patents may not provide us with competitive advantages. In addition, competitors may design around our technology or develop competing technologies. We could incur substantial costs to bring suits in which we may assert our patent rights against others or defend ourselves in suits brought against us. An unfavorable outcome of any such litigation could have a material adverse effect on our business and results of operations.

We also rely on trade secrets to protect our technology and proprietary information, especially where we believe patent protection is not appropriate or obtainable. However, trade secrets are difficult to protect. We vigorously pursue confidentiality agreements and contractual provisions with our

collaborators, potential customers, employees, and consultants to protect our trade secrets and proprietary know-how. These agreements may be breached and we may not have adequate remedies for such breach. While we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors or scientific and other advisors, our potential customers, or our strategic partners may unintentionally or willfully disclose our proprietary information to competitors. If we were to enforce a claim that a third party had illegally obtained and was using our trade secrets, our enforcement efforts would be expensive and time consuming, and the outcome would be unpredictable. In addition, courts outside the United States are sometimes unwilling to protect trade secrets. Moreover, if our competitors independently develop equivalent knowledge, methods and know-how, it will be more difficult for us to enforce our rights and our business could be harmed.

If we are not able to defend the patent or trade secret protection position of our technologies, then we will not be able to exclude competitors from developing or marketing competing technologies, and we may not generate enough revenues from product sales to justify the cost of development of our technologies and to achieve or maintain profitability.

We also rely on trademarks to establish a market identity for our products. We and Telles currently have five registered trademarks in the United States and six pending trademark applications filed with the U.S. Patent and Trademark Office in addition to registrations and pending application in foreign jurisdictions. We expect to file additional applications as new trademarks are selected for our products, but because of the costs of filing and prosecuting such applications, there will be many countries in which we will choose not to file applications. To maintain the value of our trademarks, we might have to file lawsuits against third parties to prevent them from using trademarks confusingly similar to or dilutive of our registered or unregistered trademarks. Also, we might not obtain registrations for our pending or future trademark applications, and might have to defend our registered trademark and pending trademark applications from challenge by third parties. Enforcing or defending our registered and unregistered trademarks might result in significant litigation costs and damages, including the inability to continue using certain trademarks. In the event that we are unable to continue using certain trademarks, we may be forced to rebrand our products, which could result in the loss of brand recognition, and could require us to devote resources to advertise and market brands.

**A substantial portion of the technology used in our business is owned by or subject to retained rights of third parties.**

We have, and expect to have in the future, research and development agreements with academic institutions that retain rights to the developed intellectual property. The academic institutions generally retain ownership rights over the technology for use in non-commercial academic and research fields, including in some cases the right to license the technology to third parties for use in those fields. It is difficult to monitor and enforce such noncommercial academic and research uses, and we cannot predict whether the third party licensees would comply with the use restrictions of these licenses. We could incur substantial expenses to enforce our rights against such licensees. In addition, even though the rights that academic institutions obtain are generally limited to the noncommercial academic and research fields, they may obtain rights to commercially exploit developed intellectual property in limited instances. Furthermore, under research and development agreements with academic institutions, our rights to intellectual property developed thereunder are not always certain, but instead may be in the form of an option to obtain license rights to such intellectual property. If we fail to exercise our option rights timely and/or we are unable to negotiate a license agreement, the academic institution may offer a license to the developed intellectual property to third parties for commercial purposes. Any such commercial exploitation could adversely affect our competitive position and have a material adverse effect on our business.

The academic institutions also generally have the right to terminate our license in the event that we fail to make required payments or otherwise breach the applicable agreements. The expiration of

patents licensed from third parties or the termination of those licenses could have a material adverse effect on our business.

Some of our patents may cover inventions that were conceived or first reduced to practice under, or in connection with, U.S. government contracts or other federal funding agreements. With respect to inventions conceived or first reduced to practice under such federal funding agreements, the U.S. government may retain a nonexclusive, non-transferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the invention throughout the world. In addition, if we fail to comply with our reporting obligations or to adequately exploit the developed intellectual property under these federal funding agreements, the U.S. government may obtain additional rights to the developed intellectual property, including the right to take title to any patents filed by us or to permit others to commercially exploit the intellectual property itself. Furthermore, our ability to exclusively license or assign the intellectual property developed under these federal funding agreements to third parties may be limited or subject to the U.S. government's approval or oversight. These limitations could have a significant impact on the commercial value of the developed intellectual property.

**Third parties may claim that we infringe their intellectual property, and we could suffer significant litigation or licensing expense as a result.**

Various U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in areas relevant to biobased plastics, chemicals and energy, their compositions, formulations and uses, and processes for their production. Such third parties may claim that we infringe their patents. For example, we are aware of competitors with patents relating to biobased plastics. Such competitors may allege that we infringe these patents. There could also be existing patents of which we are not aware that our technologies may inadvertently infringe. In addition, because patent applications are maintained in secrecy for a period of time after they are filed, there may be currently pending applications, unknown to us, which may later result in issued patents that our technologies may infringe. If third parties assert claims against us alleging that we infringe their patents or other intellectual property rights, we could incur substantial costs and diversion of management resources in defending these claims, and the defense of these claims could have a materially adverse effect on our business. In addition, if third parties assert claims against us and we are unsuccessful in defending against these claims, these third parties may be awarded substantial damages, as well as injunctive or other equitable relief against us, which could effectively block our ability to make, use, sell, distribute, or market our products and services in the United States or abroad. We cannot currently predict whether a third party will assert a claim against us, or pursue infringement litigation against us; nor can we predict the ultimate outcome of any such potential claims or litigation.

In the event that a claim relating to intellectual property is asserted against us, or third parties not affiliated with us hold pending or issued patents that relate to our products or technology, we may seek licenses to such intellectual property or challenge those patents. However, we may be unable to obtain these licenses on acceptable terms, if at all, and our challenge of the patents may be unsuccessful. Our failure to obtain the necessary licenses or other rights could prevent the sale, manufacture, or distribution of some of our products and, therefore, could have a material adverse effect on our business.

**If we are unable to manage our growth effectively, our business could be adversely affected.**

While historically we have focused the majority of our efforts on research and development of processes to produce Mirel, we plan to grow by allocating additional resources to developing marketing and sales expertise, entering into additional collaborations with strategic partners, adding personnel with specific technological experience, and developing and commercializing additional products, such as biobased plastics in plant crops and biological production of other chemicals and chemical

intermediates from renewable resources. Our ability to grow in this manner will require that we manage a diverse range of relationships and projects, expand our personnel resources and facilities, and broaden our geographic presence. Our inability to do any of these could prevent us from successfully implementing our growth strategy, and our business could be adversely affected.

We believe that sustained growth at a higher rate will place a strain on our management, as well as on our other human resources. To manage this growth, we must continue to attract and retain qualified management, professional, scientific, technical and operating personnel. If we are unable to hire at the required rate, we may be unable to staff and manage projects adequately. This may slow the development process, and result in the commercialization of fewer products or compromise the quality of our work.

**We may not be successful in identifying market needs for new technologies and developing new products to meet those needs.**

The success of our business model depends on our ability to correctly identify market opportunities for biologically produced plastics, chemicals and energy. We intend to identify new market needs, but we may not always have success in doing so, in part because customers may perceive risks in adopting new materials, like Mirel, for use with existing products and because the markets for new materials and other products are not well-developed.

The materials and manufacturing technologies we research and develop are new and are steadily changing and advancing. The products that are derived from these technologies may not be applicable or compatible with the demands in existing markets. Our existing products and technologies may become uncompetitive or obsolete if our competitors adapt more quickly than we do to new technologies and changes in customers' requirements. Furthermore, we may not be able to identify new opportunities as they arise for our products since future applications of any given product may not be readily determinable, and we cannot reasonably estimate the size of any markets that may develop. If we are not able to successfully develop new products, we may be unable to increase our product revenues.

**Our products are made using genetically-engineered systems and may be, or may be perceived as being, harmful to human health or the environment.**

Mirel is a new material produced from genetically-engineered microbes and genetically engineered corn used as a feedstock. In the future our products may be produced in genetically-engineered crops. We may incur liability and/or legal expenses if there are claims that our genetically-engineered crops damage the environment or contaminate other farm crops. Some countries have adopted regulations prohibiting or limiting the production of genetically-engineered crops and the sale of products made using genetically engineered organisms. Such regulations could harm our business and impair our ability to produce biobased plastics in that manner.

The subject of genetic engineering of crops and other species has received negative publicity and has aroused public debate. Government authorities could, for social or other purposes, prohibit or regulate the development and use of genetically-engineered organisms or products made from such organisms. Social concerns could adversely affect acceptance of our products.

The manufacture, use, sale and marketing of Mirel is subject to government regulations in the U.S and other countries, including requirements for government approval of food contact applications. The failure to comply with governmental regulations or to obtain government approval for our products could have a material adverse effect on our results of operations and financial condition. Governmental regulation or negative publicity could delay, reduce or eliminate market demand for our products which could have a material adverse effect on our results of operations and financial condition.

**We face and will face substantial competition in several different markets that may adversely affect our results of operations.**

The plastics, chemicals and energy that we have developed or plan to develop will compete with other technologically innovative products as well as conventional petroleum-based plastics, chemicals and energy. We face and will face substantial competition from a variety of companies in the biodegradable, renewable resource-based plastic segment, within which there are three distinct technologies: PHA, PLA and starch-based biodegradables. While some of our competitors' existing products that are produced from renewable feedstocks do not have the range of properties that Mirel offers, such products are, nonetheless, suitable for use in a range of products at a price which may be lower than our premium priced product offerings. Our competitors include, but are not limited to, Kaneka and Tianan in the PHA plastic segment, NatureWorks, Mitsui Chemical, Toyota, Novamont, and Stanelco in PLA and starch-based biodegradables, as well as all of the producers of petroleum-based plastics.

Many of our competitors have longer operating histories, greater name recognition, larger customer bases and significantly greater financial, sales and marketing, manufacturing, distribution, technical and other resources than we do. These competitors may be able to adapt more quickly to new or emerging technologies and changes in customer requirements. In addition, current and potential competitors have established or may establish financial or strategic relationships among themselves or with existing or potential customers or other third parties. Accordingly, new competitors or alliances among competitors could emerge and rapidly acquire significant market share. We cannot assure you that we will be able to compete successfully against current or new competitors.

**We are subject to significant foreign and domestic government regulations, including environmental and health and safety regulations, and compliance or failure to comply with these regulations could harm our business.**

Our current and planned activities involve the use of a broad range of materials that are, or may be, considered hazardous under applicable laws and regulations. Accordingly, we and ADM are subject to a number of foreign, federal, state, and local laws and regulations relating to protection of the environment, the storage, use, disposal of, and exposure to, hazardous materials and wastes, and health and safety, including Food and Drug Administration regulations related to food contact materials. Compliance with these laws and regulations could be costly and could delay or even preclude commercialization of our products for certain applications. There can be no assurance that we will be able to meet the necessary regulatory requirements for commercialization of Mirel for relevant food contact applications in a timely manner or at an acceptable cost.

If we were to violate or become liable under environmental, health and safety laws, we could incur costs, fines and civil and criminal penalties, personal injury and third party property damage claims, or could be required to incur substantial investigation or remediation costs. Moreover, a failure to comply with environmental laws could result in fines and the revocation of environmental permits, which could prevent us, or our strategic partners, from conducting business. Liability under environmental laws can be joint and several and without regard to fault. There can be no assurance that violations of environmental health and safety laws will not occur in the future as a result of the inability to obtain permits, human error, equipment failure or other causes. Environmental laws could become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with violations, which could harm our business. Accordingly, violations of present and future environmental laws could restrict our ability to expand facilities, pursue certain technologies, and could require us to acquire costly equipment, or to incur potentially significant costs to comply with environmental regulations.

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Compliance with foreign, federal, state and local environmental laws and regulations represents a small part of our present budget. If we fail to comply with any such laws or regulations, however, a government entity may levy a fine on us or require us to take costly measures to ensure compliance. Any such fine or expenditure may adversely affect our business activities, financial condition, or results of operations. We cannot predict the extent to which future legislation and regulation could cause us to incur additional operating expenses, capital expenditures, or restrictions and delays in the development of our products and properties.

### **We may not have adequate insurance and may have substantial exposure to payment of product liability claims.**

The testing, manufacture, marketing, and sale of our products and products sold by our licensees may involve product liability risks. Although we currently have product liability insurance covering claims up to \$4 million per occurrence and in the aggregate, and Telles has product liability insurance covering claims up to \$2 million per occurrence and \$50 million in the aggregate, we may not be able to maintain this product liability insurance at an acceptable cost, if at all. In addition, this insurance may not provide adequate coverage against potential losses. If claims or losses exceed our liability insurance coverage, we may go out of business.

### **Potential future acquisitions could be difficult to integrate, divert the attention of key personnel, disrupt our business, dilute stockholder value and impair our financial results.**

As part of our business strategy, we may consider acquisitions of companies, technologies and assets that we believe are a strategic fit with our business. Acquisitions involve numerous risks, any of which could harm our business, including:

- difficulties in integrating the operations, technologies, existing contracts, accounting and personnel of the target company and realizing the anticipated benefits of the combined businesses;
- diversion of financial and management resources from existing operations;
- the price we pay or other resources that we devote may exceed the value we realize, or the value we could have realized if we had allocated the purchase price or other resources to another opportunity;
- potential loss of key employees, collaborators and strategic alliances from either our current business or the acquired company's business;
- assumption of unanticipated problems or latent liabilities; and
- inability to generate sufficient revenue to offset acquisition costs.

Acquisitions also frequently result in the recording of goodwill and other intangible assets which are subject to potential impairments in the future that could harm our financial results. In addition, if we finance acquisitions by issuing convertible debt or equity securities, our existing stockholders may be diluted, which could lower the market price of our common stock. As a result, if we fail to properly evaluate acquisitions or investments, we may not achieve the anticipated benefits of any such acquisitions, and we may incur costs in excess of what we anticipate. The failure to successfully evaluate and execute acquisitions or investments or otherwise adequately address these risks could materially harm our business and financial results.

**Each segment of our operations is currently conducted at a single location, which makes us susceptible to disasters or other disruptions.**

ADM will initially conduct all commercial manufacturing of Mirel at the Commercial Manufacturing Facility in Clinton, Iowa, and all compounding services will initially be provided by a single toll compounding facility. A natural disaster or other business interruption at either of these sites could significantly impact Mirel production and sales. Our research and development operations are located at a single facility in Cambridge, Massachusetts. We take precautions to safeguard our facilities, including insurance, health and safety protocols, and off-site storage of critical research results and of computer data. However, a natural disaster, such as a fire, flood or earthquake, or a disruption due to mechanical failure, human error, business failure of a contractor, labor strikes, vandalism, or other causes, could damage or destroy our equipment, inventory, our microbial strains, plants or other biological materials, or result in the loss of data from our information technology systems. This could delay our research and development programs and could cause us to incur additional expenses. The insurance we maintain against natural disasters or business interruptions may not be adequate to cover our losses in any particular case.

***Risks Relating to Owning Our Common Stock***

**An active trading market for our common stock may not be available on a consistent basis to provide stockholders with adequate liquidity. Our stock price may be extremely volatile, and our stockholders could lose a significant part of their investment.**

An active trading market for shares of our common stock may not be sustained on a consistent basis. The public trading price for our common stock will be affected by a number of factors, including:

- reported progress of our business and technology development, including ramp up of operations of the Commercial Manufacturing Facility, relative to investor expectations;
- changes in earnings estimates, investors' perceptions, recommendations by securities analysts or our failure to achieve analysts' earnings estimates;
- quarterly variations in our or our competitors' results of operations;
- general market conditions and other factors unrelated to our operating performance or the operating performance of our competitors;
- future sales of our common stock;
- future issuance and/or sale of preferred stock;
- announcements by us, or our competitors, of acquisitions, new products, significant contracts, commercial relationships or capital commitments;
- commencement of, or involvement in, litigation;
- any major change in our board of directors or management;
- changes in governmental regulations or in the status of our regulatory approvals;
- announcements related to patents issued to us or our competitors and to litigation involving our intellectual property;
- a lack of, limited, or negative industry or security analyst coverage;
- developments in our industry and general economic conditions; and
- the other factors described elsewhere in these "Risk Factors."



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As a result of these factors, our stockholders may not be able to resell their shares at, or above, their purchase price. In addition, the stock prices of many technology companies have experienced wide fluctuations that have often been unrelated to the operating performance of those companies. The valuations of many biotechnology companies without consistent product revenues and earnings are extraordinarily high based on conventional valuation standards, such as price to earnings and price to sales ratios. These trading prices and valuations may not be sustained. Any negative change in the public's perception of the prospects of biotechnology companies could depress our stock price regardless of our results of operations. These factors may have a materially adverse affect on the market price of our common stock.

### **Our financial results may vary significantly from period to period which may reduce our stock price.**

Our financial results may fluctuate as a result of a number of factors, many of which are outside of our control, which may cause the market price of our common stock to fall. For these reasons, comparing our operating results on a period-to-period basis may not be meaningful, and you should not rely on our past results as an indication of our future performance. Our financial results may be negatively affected by any of the risk factors listed in this "Risk Factors" section and, in particular, the following risks:

- failure to estimate or control contract costs;
- adverse judgments or settlements in legal disputes;
- expenses related to acquisitions, mergers or joint ventures;
- other one-time financial charges;
- fluctuations due to revenue recognition under strategic alliance agreements;
- fluctuations due to the effects of inflation;
- failure to produce commercialized products or to find customers for these products; and
- that some of our programs are supported by government funding, which is unpredictable.

### **Provisions in our certificate of incorporation and by-laws and Delaware law and our shareholder rights plan might discourage, delay or prevent a change of control of our company or changes in our management and, therefore, depress the trading price of our common stock.**

Provisions of our certificate of incorporation and by-laws and Delaware law may discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which our stockholders might otherwise receive a premium for their shares of our common stock. These provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management. These provisions include:

- limitations on the removal of directors;
- a classified board of directors so that not all members of our board are elected at one time;
- advance notice requirements for stockholder proposals and nominations;
- the inability of stockholders to act by written consent or to call special meetings;
- the ability of our board of directors to make, alter or repeal our by-laws;
- a supermajority stockholder vote requirement for amending certain provisions of our amended and restated certificate of incorporation and bylaws; and
- the ability of our board of directors to designate the terms of and issue new series of preferred stock without stockholder approval.

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The affirmative vote of the holders of at least 75% of our shares of capital stock entitled to vote is necessary to amend or repeal the above provisions of our certificate of incorporation. In addition, absent approval of our board of directors, our by-laws may only be amended or repealed by the affirmative vote of the holders of at least 75% of our shares of capital stock entitled to vote.

We have adopted a shareholder rights plan, the purpose of which is, among other things, to enhance our Board's ability to protect shareholder interests and to ensure that shareholders receive fair treatment in the event any coercive takeover attempt of the Company is made in the future. The adoption of the plan was intended, in part, to address the risk that a third party could acquire our Company at a price that does not reflect the full value of our business and our technologies. The shareholder rights plan could make it more difficult for a third party to acquire, or could discourage a third party from acquiring, our Company or a large block of our Company's common stock.

In addition, Section 203 of the Delaware General Corporation Law prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder, generally a person which together with its affiliates owns, or within the last three years has owned, 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner.

The existence of the foregoing provisions and anti-takeover measures could limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our Company, thereby reducing the likelihood that our stockholders could receive a premium for their common stock in an acquisition.

**We do not currently intend to pay dividends on our common stock and, consequently, our stockholders' ability to achieve a return on their investment will depend on appreciation in the price of our common stock.**

We have never declared or paid any cash dividends on our common stock and do not currently intend to do so for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Therefore, our stockholders are not likely to receive any dividends on their common stock for the foreseeable future.

**ITEM 1B. UNRESOLVED STAFF COMMENTS**

Not applicable.

**ITEM 2. PROPERTIES**

We do not own any real property. We currently lease approximately 28,000 square feet of office and research and development space at 21 Erie Street, Cambridge, Massachusetts. Our lease for this facility expires in 2014, with the option to renew for two additional five year periods. We also sublease approximately 5,200 square feet of additional office space at One Kendall Square, Cambridge, Massachusetts where the majority of our general and administrative employees are located. Our sublease for this facility expires on March 31, 2010. We expect to enter into a new lease for the same space beginning April 1, 2010. We also lease approximately 13,700 square feet of office and laboratory space at 650 Suffolk Street, Lowell, Massachusetts, which serves as the headquarters of Telles, our joint venture with ADM. Our lease for this facility expires in 2012.

**ITEM 3. LEGAL PROCEEDINGS**

From time to time, we may be subject to legal proceedings and claims in the ordinary course of business. We are not currently aware of any such proceedings or claims that we believe will have, individually or in the aggregate, a material adverse effect on the business, financial condition or the results of operations.

**ITEM 4. [RESERVED]**

**PART II****ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES****Market Information**

Our common stock has been traded on the NASDAQ Global Market under the symbol "MBLX" since November 10, 2006. The following table sets forth, for the period indicated, the high and low sales prices for our common stock, as reported by the NASDAQ Global Market, for the periods indicated below:

	Common Stock Price			
	2009		2008	
	High	Low	High	Low
First Quarter	\$ 13.00	\$ 4.62	\$ 24.50	\$ 9.61
Second Quarter	8.61	6.20	13.26	9.80
Third Quarter	12.08	7.00	13.88	8.05
Fourth Quarter	13.45	8.63	12.84	5.33

The close price of our common stock, as reported by the NASDAQ Global Market, was \$10.35 on March 8, 2010.

**Stockholders**

As of March 8, 2010, there were 26,541,511 shares of our common stock outstanding held by 79 stockholders of record.

**Dividends**

We have never declared or paid any cash dividends on our capital stock and do not expect to pay any cash dividends for the foreseeable future. We intend to use future earnings, if any, in the operation and expansion of our business. Any future determination relating to our dividend policy will be made at the discretion of our board of directors, based on our financial condition, results of operations, contractual restrictions, capital requirements, business properties, restrictions imposed by applicable law and other factors our board of directors may deem relevant.

**Equity Compensation Plan Information**

Please see Part III, Item 11, for information regarding securities authorized for issuance under our equity compensation plans.

**Unregistered Sales of Securities**

On November 13, 2009, the Company issued 13,047 shares of common stock to participants in its Metabolix, Inc. 401(k) Plan as a matching contribution. The issuance of these securities is exempt from registration pursuant to Section 3(a)(2) of the Securities Act of 1933 as exempted securities.

**Issuer Purchases of Equity Securities**

During the quarter ended December 31, 2009, there were no repurchases made by us or on our behalf, or by any "affiliated purchasers," of shares of our common stock.

**ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA**

The selected condensed consolidated statement of operations data for the years ended December 31, 2009, 2008, and 2007 and balance sheet data as of December 31, 2009 and 2008 have been derived from our consolidated financial statements and related notes, which are included elsewhere in this report, and have been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as indicated in their report. The selected condensed consolidated statement of operations data for the years ended December 31, 2006 and 2005 and the balance sheet data as of December 31, 2007, 2006 and 2005 have been derived from our audited financial statements that are not included in this report. The selected financial data set forth below should be read in conjunction with our financial statements, the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this report. The historical results are not necessarily indicative of the results to be expected for any future period.

	Year ended December 31,				
	2009	2008	2007	2006	2005
(In thousands, except share and per share data)					
<b>Statement of operations data:</b>					
Total Revenue	\$ 1,425	\$ 1,555	\$ 1,683	\$ 4,590(2)	\$ 2,781
Operating expenses:					
Research and development expenses, including costs of revenue	24,471	24,667	19,901	11,235	5,980
Selling, general and administrative expenses	15,683	15,780	15,598	10,879	3,825
Total operating expenses	40,154	40,447	35,499	22,114	9,805
Loss from operations	(38,729)	(38,892)	(33,816)	(17,524)	(7,024)
Interest income and (expense) net	772	2,887	5,941	1,462	99
Loss on investment in related parties	—	—	—	—	(700(1))
Net loss(3)	\$ (37,957)	\$ (36,005)	\$ (27,875)	\$ (16,062)	\$ (7,625)
Net loss per share Basic and Diluted	\$ (1.62)	\$ (1.58)	\$ (1.27)	\$ (2.96)	\$ (2.56)
Number of shares used in per share calculations Basic and Diluted	23,435,264	22,839,913	21,997,397	5,432,586	2,975,116

- (1) At December 31, 2005 we determined that the fair value of our preferred stock investment in Tepha, Inc. was impaired and recorded an asset impairment charge to our entire investment in Tepha, Inc.
- (2) In 2006, we recognized \$2,500 of deferred revenue associated with the termination of our joint development arrangement with BP America Production Company.
- (3) On January 1, 2006 the Company changed the manner in which it accounts for share-based compensation. The year ended December 31, 2005 does not reflect share-based compensation expense.

	Year ended December 31,				
	2009	2008	2007	2006	2005
	(In thousands)				
<b>Balance Sheet Information:</b>					
Cash, cash equivalents and short-term investments	\$ 92,202	91,096	\$ 109,326	\$ 122,080	\$ 3,174
Total assets	97,554	96,946	119,004	127,596	7,325
Long-term obligations	649	805	963	1,120	1,280
Long-term deferred revenue	37,299	32,440	24,180	13,667	5,621
Total liabilities	42,510	37,855	29,802	18,008	9,874
Redeemable convertible preferred stock	—	—	—	—	44,009
Accumulated deficit	(168,074)	(130,117)	(94,112)	(66,237)	(50,175)
Total stockholder's equity (deficit)	55,044	59,091	89,202	109,588	(46,558)

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

The following discussion and analysis should be read in conjunction with the Consolidated Financial Statements and Notes thereto included in this Annual Report on Form 10-K.

All dollar amounts are stated in thousands.

### Overview

We are a bioscience company that develops and is in the process of commercializing environmentally sustainable, economically attractive alternatives to petroleum-based plastics, with work underway to do the same with chemicals and energy. We have core capabilities in microbial genetics, fermentation process engineering, chemical engineering, polymer science, plant genetics and botanical science, and we have assembled these capabilities in a way that has allowed us to integrate biotechnology with chemical engineering and industrial practice.

Our first platform, which we are commercializing through Telles, LLC (Telles), a joint venture with Archer Daniels Midland Company, or ADM, is a proprietary, large-scale microbial fermentation system for producing a versatile family of polymers known as polyhydroxyalkanoates (PHA's), which we have branded under the name Mirel™. Through Telles, we intend to sell these bioplastics as biobased and biodegradable, but functionally equivalent, alternatives to petroleum-based plastics. Mirel offers superior biodegradability characteristics and can be used in a wide range of commercial applications, including products used in agriculture and horticulture, compost and organic waste diversion bags, marine and aquatic applications, consumer products, business equipment and durable goods, and general packaging materials. Mirel is now being produced in a new commercial scale plant located in Clinton, Iowa (the Commercial Manufacturing Facility) designed for an annual capacity of 110 million pounds. ADM completed construction of the initial phase of the Commercial Manufacturing Facility in 2009. The Commercial Manufacturing Facility produces biobased and biodegradable Mirel plastic using corn sugar, an abundant agriculturally-produced renewable resource.

Our second technology platform, which is in an early stage, is a biomass biorefinery system using plant crops to co-produce both bioplastics and bioenergy. For this system, we intend to extract polymer from the engineered plant crop, so that the remaining plant material can be used as a biomass feedstock for the production of bioenergy products including electricity and biofuel. We are engineering switchgrass to produce bioplastics in the leaf and stem of the plant. We have also collaborated with the Australian Cooperative Research Centre to do the same in sugarcane, and with the Donald Danforth Plant Science Center to develop an advanced industrial oilseed crop for co-production of bioplastics along with vegetable oil, biodiesel fuel, or oleochemicals. Switchgrass is a commercially and ecologically

attractive, non-food energy crop that is indigenous to North America and is generally considered to be a leading candidate for cellulose-derived production of ethanol and other biofuels. Sugarcane is an established energy crop that is well suited for tropical regions of the world. We believe that using these crops to co-produce bioplastics with bioenergy products can offer superior economic value and productivity as compared to single product systems that produce them individually. We have been working on our biomass biorefinery platform using switchgrass for several years, and we believe that we are a scientific leader in this field. Our goal for this program is to have commercially viable plant varieties in pre-commercial field trials within two years. We may also seek to establish alliances with partners to commercially exploit this platform.

As demonstrated by our first two technology platforms, we take an integrated systems approach to our technology development. We are focused on developing entire production systems from gene to end product as opposed to developing specific technologies (for example, gene sequencing, shuffling or directed evolution) or singular aspects of a product's production (for example, providing a key enzyme, catalyst or ingredient). We believe this systems approach optimizes manufacturing productivity and, when commercialized, will enable us to capture more economic value from any platform that we pursue.

For our third platform we intend to apply our core capabilities in microbial engineering to develop biological routes to other chemicals and chemical intermediates. During 2009 we completed all work under our U.S. Department of Commerce National Institute of Standards and Technology grant, a \$2 million grant aimed at producing four-carbon ("C4") chemicals from renewable sources. C4 chemicals are a large family of chemicals enabling a wide range of end use applications, including engineering resins, urethanes, solvents, and personal care products. We were able to achieve all of the technical milestones outlined in this grant. Based on these accomplishments, we believe we have the technical foundation for an attractive C4 chemicals business. During 2009, we conducted a detailed review of the C4 external economic and competitive landscape, and as a result we are prioritizing the specialty C4 chemicals segment for commercialization. Discussions with potential partners were initiated in 2009 with the goal of commencing scale-up development activities during 2010.

To exploit our first technology platform, we plan to work closely with ADM to bring the Commercial Manufacturing Facility in Clinton, Iowa to full operations and capacity in advance of customer demand for Mirel. The biodegradable bioplastics that this facility is beginning to produce are highly versatile and range in properties from hard and strong to soft and flexible. These properties allow for a wide variety of commercial applications, offering a biobased alternative to petroleum-derived synthetic materials which are not biodegradable. Through Telles we are positioning Mirel as a premium priced specialty material catering to customers who want to match the functionality of petroleum-based plastic, with the added dimension of environmental responsibility to their products and brands.

With ADM, we have conducted product and business development activities, including production of pre-commercial amounts of Mirel, working with potential customers, and initiating qualification trials of our material for selected customer applications. In addition, we have established commercial supply agreements with several customers through Telles. We expect that our products will initially be sold to companies that are:

- establishing themselves as leaders of the emerging market trend toward environmentally responsible products and services;
- addressing current or anticipated regulatory pressure to shift to more sustainable products; and/or
- selling products in which biodegradability is a key functional requirement.

We have a pipeline of current and prospective customers that reflect each of these traits.

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Since our inception in 1992, we have focused on the research of our platform technologies, the acquisition of patents to enhance these platforms, product development, and pre-commercial manufacturing of Mirel. Large-scale commercialization of Mirel will require significant additional expenditures in several areas, including research and development, product development, and sales and marketing organization development. We expect that research and development expenses for product development activities will increase through the end of the Construction Phase of the ADM agreement as we continue to develop, test and refine products to meet specification requirements of our customers. Upon the commencement of the Commercial Phase of the agreement research and development expenses related to Mirel product development are expected to decrease as many of these costs will be transferred to Telles. Conversely, we expect that our personnel related costs will increase to support our ongoing microbial and plant research programs.

We have generated revenues primarily from government grants, research and development payments, license fees, and royalty payments. We have funded our operations primarily through the sale of equity securities, government grants, and payments from our collaborative partners.

We have incurred significant losses since our inception. As of December 31, 2009, our accumulated deficit from inception to date was \$168,074 and total stockholders' equity was \$55,044. We recognized net losses of \$37,957, \$36,005 and \$27,875 in 2009, 2008, and 2007, respectively.

### **Collaborative Arrangements**

Our strategy for collaborative arrangements is to retain substantial participation in the future economic value of our technology while receiving current cash payments to offset research and development costs and working capital needs. By their nature, these agreements are complex and have multiple elements that cover a variety of present and future activities.

#### ***ADM Collaboration***

In 2004, we entered into the Technology Alliance and Option Agreement with ADM Polymer Corporation, or ADM Polymer, a subsidiary of ADM. The goal of the Technology Alliance and Option Agreement was to demonstrate the capabilities of our fermentation and recovery technologies at commercial scale and to prepare a master plan and budget for the construction of a commercial facility with a 110 million pound annual capacity. Upon achievement of such goals, ADM Polymer had the option to enter into a commercial alliance with us through execution of the Commercial Alliance Agreement, for further research, development, manufacture, use, and sale of bioplastics. In July 2006, ADM Polymer exercised its option under our Technology Alliance and Option Agreement and entered into a Commercial Alliance Agreement with us. Upon entering into the Commercial Alliance Agreement, the Technology Alliance and Option Agreement terminated pursuant to its terms. The Commercial Alliance Agreement called for Telles to pay the Company quarterly support payments of \$1,575 each. The last of fourteen quarterly support payments was received as of June 30, 2009. All quarterly support payments received from ADM on behalf of Telles, totaling \$22,050, have been recorded as deferred revenue on the Company's balance sheet and we will continue to defer recognition of these payments received from ADM during the Construction Phase of our agreement. We expect to begin recognizing this deferred revenue at the time of the achievement of a milestone referred to in the Commercial Alliance Agreement as the "First Commercial Sale". The deferred revenue will be recognized on a straight line basis over a period of approximately ten years in which our contractual obligations are fulfilled in accordance with the terms of the Commercial Alliance Agreement. Achievement of the First Commercial Sale requires the sale by Telles to third parties of at least one million pounds of Mirel manufactured at the Commercial Manufacturing Facility. Qualifying sales must meet certain criteria, including a minimum order size, product must be accepted by the customers in accordance with the terms of their contracts, and payment must be received in order for such sales to contribute towards the First Commercial Sale milestone. We also expect to receive

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payments from Telles for the compounding services we provide as well as royalty payments. The compounding payments and royalty payments are due to us after Telles has sold the product to the end customer and we expect to recognize these payments in the period they have been earned.

We received the following payments from these arrangements to offset operating cash needs:

- upfront payment of \$3,000 from ADM in November 2004;
- milestone payments of \$2,000 from ADM in May 2006;
- support payments of \$22,050 from ADM, on behalf of Telles, through June 30, 2009;
- cumulative cost sharing payments from ADM for pre-commercial manufacturing plant construction and operations made in accordance with the Technology Alliance and Option Agreement of \$1,209; and
- cumulative cost sharing payments from ADM for pre-commercial manufacturing plant construction and operations made in accordance with the Commercial Alliance Agreement of \$8,675.

During the commercial alliance, ADM is responsible for the construction, financing and operation of the Commercial Manufacturing Facility which ADM Polymer owns, through a manufacturing agreement with Telles. We will provide or procure compounding services to convert the output from the Commercial Manufacturing Facility into forms that are suitable for various commercial applications.

Although Telles is a separate legal entity owned equally by us and ADM, ADM will disproportionately fund the activities of the joint venture. Specifically, the cost of the Commercial Manufacturing Facility, the working capital requirements of the joint venture and the support payments to us will exceed the investments made by us to establish compounding operations for the joint venture. In order to rebalance the respective investments made by the parties, a preferential distribution of cash flow will be used, whereby all profits, after payment of all royalties, reimbursements and fees, from the joint venture will be distributed to ADM until ADM's disproportionate investment in the joint venture, including the costs of constructing the Commercial Manufacturing Facility, have been returned to ADM. Once ADM has recouped such amounts, the profits of the joint venture will be distributed in equal amounts to the parties. In order to track the disproportionate investments ADM has made, a Ledger Account has been established to record the respective investments made by the parties. As of December 31, 2009 the balance of the ADM Ledger Account was \$384,784 and this balance is expected to increase as the remaining manufacturing equipment and systems are brought online at the Commercial Manufacturing Facility and until Telles achieves positive cash flow from its operations.

### **United States Government Contracts and Grants**

As of December 31, 2009, expected gross proceeds of \$343 remain to be received under a government grant, which includes amounts for reimbursement to our subcontractors, as well as reimbursement for our employees' time and benefits and other expenses related to performance under the grant.



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The status of our United States government grant is as follows:

Program Title	Funding Agency	Total Government Funds	Total received through December 31, 2009	Remaining amount available as of December 31, 2009	Contract/Grant Expiration
Blow Molded Bioproducts From Renewable Plastics	Department of Agriculture	\$ 349	\$ 6	\$ 343	September 2010
Total		<u>\$ 349</u>	<u>\$ 6</u>	<u>\$ 343</u>	

### Critical Accounting Estimates and Judgments

Our consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs and expenses, and related disclosures. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates.

We believe that of our significant accounting policies, which are described in Note 2 to our consolidated financial statements. The accounting policies described below involve a greater degree of judgment and complexity. Accordingly, we believe that the accounting policies described below are the most critical to aid in fully understanding and evaluating our consolidated financial condition and results of operations.

### Revenue Recognition

We recognize revenue under government research grants when the related expense is incurred and we have obtained governmental approval to use the grant funds for agreed upon budgeted expenses.

For revenue received under our arrangements with ADM, we recognize revenue in accordance with the accounting guidance on revenue recognition and revenue arrangements with multiple deliverables.

Our arrangement with ADM contains multiple elements including obligations for us to provide future compounding services, sales and marketing services, and certain research and development activities. We have determined that these elements cannot be separated and accounted for individually as separate units of accounting. Therefore payments received from ADM have been classified as deferred revenue at the respective balance sheet dates and will begin to be recognized upon achievement of a milestone referred to in the Commercial Alliance Agreement as First Commercial Sale of Mirel. All amounts will be recognized on a straight line basis over the estimated period, of approximately ten years, in which our obligations are fulfilled in accordance with the term of the Commercial Alliance Agreement. We also expect to receive payments from Telles for the compounding services we provide as well as royalty payments. The compounding payments and royalty payments are due to us after Telles has sold the product to the end customer and we expect to recognize these payments in the period they have been earned.

Fees to license the use of the Company's proprietary and licensed technologies are recognized only after both the license period has commenced and the licensed technology, if any, has been delivered to the licensee. Royalty revenue is recognized when it becomes determinable and collectability is reasonably assured, otherwise the Company recognizes revenue upon receipt of payment.

## Stock-Based Compensation

The accounting standard for stock-based compensation requires that all stock-based payments to employees be recognized as an expense in the consolidated financial statements and that such expense be measured at the fair value of the award.

Determining the appropriate fair value model and calculating the fair value of stock-based payment awards requires the use of highly subjective assumptions, including the expected life of the stock-based payment awards and stock price volatility. We use the Black-Scholes option-pricing model to value our option grants and determine the related compensation expense. The assumptions used in calculating the fair value of stock-based awards represent management's best estimates, but the estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change, and we use different assumptions, our stock-based compensation expense could be materially different in the future. See Note 12 to the consolidated financial statements for further discussion on the key assumptions used to determine the fair values of option grants pursuant to the Black-Scholes option pricing model.

We account for stock compensation arrangements with non-employees in accordance with the accounting standard for equity instruments that are issued to other than employees for acquiring, or in conjunction with selling, goods or services, using a fair value approach. For stock options granted to non-employees, the fair value of the stock options is estimated using the Black-Scholes valuation model. Stock-based compensation expense is recognized over the period of expected service by the non-employee. As the service is performed, we are required to update these assumptions and periodically revalue unvested options and make adjustments to the stock-based compensation expense using the new valuation. These adjustments may result in higher or lower stock-based compensation expense than originally estimated or recorded, with a corresponding increase or decrease in compensation expense in the statement of operations. Ultimately, the final compensation charge for each option grant to non-employees is unknown until those options have vested or services have been completed.

## Results of Operations

### Comparison of the Years Ended December 31, 2009 and 2008

#### Revenue

	Year ended December 31,		Change
	2009	2008	
Research and development revenue	\$ 152	\$ 229	\$ (77)
License fee and royalty	10	—	10
License fee and royalty revenue from related parties	120	120	—
Grant revenue	1,143	1,206	(63)
Total revenue	<u>\$ 1,425</u>	<u>\$ 1,555</u>	<u>\$ (130)</u>

Total revenue was \$1,425 and \$1,555 for the years ending December 31, 2009 and 2008, respectively. During the twelve months ended December 31, 2009 we recognized \$152 of research and development revenue compared to \$229 for the respective period in 2008. Research and development revenue was derived primarily from the delivery of sample product produced from our pre-commercial manufacturing facility. The decrease of \$77 was primarily due to the completion of a test marketing arrangement in 2008. Grant revenue decreased from \$1,206 in 2008 to \$1,143 in 2009 as a result of the completion of the Strategic Environmental Research Development Program grant during the first

quarter of 2009. This decrease was partially offset by the Blow Molded Bioproducts from Renewable Plastics grant, which began during the third quarter of 2009.

We expect grant revenue to decline in 2010 as we currently have only one government grant with total remaining funding of \$343. In addition, we expect research and development revenue to decline in 2010 as the sale of product produced from the Commercial Manufacturing Facility will be recorded as revenue by Telles.

#### Expense

	Year ended		Change
	December 31,		
	2009	2008	
Research and development expenses, including cost of revenue	\$ 24,471	\$ 24,667	\$ (196)
Selling, general, and administrative expenses	15,683	15,780	(97)
Total operating expense	<u>\$ 40,154</u>	<u>\$ 40,447</u>	<u>\$ (293)</u>

#### *Research and development expenses*

Research and development expenses were \$24,471 and \$24,667 for the year ended December 31, 2009 and 2008, respectively. The decrease of \$196 was primarily due to a reduction in pre-commercial manufacturing expenses partially offset by the addition of new employees and related benefit expenses. Pre-commercial manufacturing costs were \$4,111 for the year ended December 31, 2009 compared to \$6,397 for the comparative period in 2008. The decrease of \$2,286 was primarily due to improvements in our production process made during 2009 as we continued to focus our attention on reducing manufacturing costs, moving certain manufacturing processes in-house and improving the quality of our pre-commercial manufacturing material. Payroll and benefit related costs were \$11,452 and \$9,445 for the years ended December 31, 2009 and 2008, respectively. The increase of \$2,007 was primarily the result of hiring personnel to support our manufacturing process and microbial and plant research programs.

We expect to incur increased research and development expenses through the Construction Phase of the ADM agreement for pre-commercial manufacturing and product development activities as we continue to develop, test, and refine product to meet the specification requirements of our customers. Upon commencement of the Commercial Phase of the ADM agreement, expenses relating to development of Mirel are expected to decrease significantly as these expenses will be transferred to Telles. During the transition period between the initial start-up of the Commercial Manufacturing Facility and the commencement of the Commercial Phase, we will continue to bear these expenses. We expect to incur increased expenses related to in-process research and development in connection with our technology platforms.

#### *Selling, general, and administrative expenses*

Selling, general, and administrative expenses were \$15,683 and \$15,780 for the years ended December 31, 2009 and 2008, respectively. Although selling, general, and administrative expenses were fairly consistent for the comparative twelve month periods these expenses may increase through the Construction Phase of the ADM agreement due to increases in payroll and expanding infrastructure to support sales and marketing efforts relating to the commercialization of Mirel. Upon the commencement of the Commercial Phase of the agreement, selling, general, and administrative expenses are expected to decrease substantially as the cost of sales and marketing efforts related to Mirel will be transferred to Telles. During the transition period between the initial start-up of the

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Commercial Manufacturing Facility and the commencement of the Commercial Phase, we will continue to bear these expenses. We expect to incur increased legal and patent filing fees in connection with all of our technology platforms.

**Other Income (Net)**

	Year ended December 31,		Change
	2009	2008	
Total other income (net)	\$ 772	\$ 2,887	\$ (2,115)

Other income (net) was \$772 and \$2,887 for the years ended December 31, 2009 and 2008, respectively. Other income (net) during both periods consisted of investment income. The overall decrease of \$2,115 was due to a decrease of \$1,934 attributable to a decline in investment yields and a decrease of \$181 attributable to a decrease in average cash and short-term investments held during 2009 compared to 2008.

**Results of Operations****Comparison of the Years Ended December 31, 2008 and 2007****Revenue**

	Year ended December 31,		Change
	2008	2007	
Research and development revenue	\$ 229	\$ 147	\$ 82
License fee and royalty	—	500	(500)
License fee and royalty revenue from related parties	120	157	(37)
Grant revenue	1,206	879	327
Total revenue	\$ 1,555	\$ 1,683	\$ (128)

Total revenue was \$1,555 for the year ended December 31, 2008 as compared to \$1,683 for the year ended December 31, 2007. The increase in research and development revenue to \$229 from \$147 was primarily due to an increase in pre-commercial sales of sample product. During the year ended December 31, 2007 we recognized license fee revenue of \$500 as a result of a license issuance fee. The increase in grant revenue was primarily attributable to an increase in activity relating to the Department of Commerce and Strategic Environmental Research Development Program grants. This increase was partially offset by the completion of our grant from the Department of Energy during the second quarter of 2007.

**Expense**

	Year ended December 31,		Change
	2008	2007	
Research and development expenses, including cost of revenue	\$ 24,667	\$ 19,901	\$ 4,766
Selling, general, and administrative expenses	15,780	15,598	182
Total operating expense	\$ 40,447	\$ 35,499	\$ 4,948

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**Research and development expenses**

Research and development expenses were \$24,667 and \$19,901 for the years ended December 31, 2008 and 2007, respectively. The increase of \$4,766 was primarily due to increased activity related to product development activities associated with developing new product grades and formulations for prospective Mirel customers, and increased personnel to support our microbial and plant research programs. Research and development payroll and benefits related expenses, including stock-based compensation, increased by \$2,245 for the year ended December 31, 2008 to \$9,445 compared to \$7,200 for the year ended December 31, 2007. Depreciation expense increased by \$1,681 to \$2,858 for the year ended December 31, 2008 as compared to \$1,177 for the year ended December 31, 2007. The increase in depreciation is primarily attributable to leasehold improvements in our pre-commercial manufacturing facility which were placed in service during December of 2007. In addition, we purchased depreciable equipment during 2008 to support our microbial and plant science programs.

**Selling, general, and administrative expenses**

Selling, general, and administrative expenses were \$15,780 and \$15,598 for the years ended December 31, 2008 and 2007, respectively. The increase of \$182 was primarily due to the expansion of our facilities, growth in administrative structure to support the growth of the company and increased sales and marketing activities to prepare for the commercialization of Mirel.

**Other Income (Net)**

	Year ended December 31,		Change
	2008	2007	
Total other income (net)	\$ 2,887	\$ 5,941	\$ (3,054)

Other income (net) consists of investment income and was \$2,887 and \$5,941 for the years ended December 31, 2008 and 2007, respectively. The overall decrease of \$3,054 during the year ending December 31, 2008 was due to a decrease of \$2,547 attributable to a market decline in investment yields during the period, our decision to convert a majority of our investment portfolio to lower risk/lower yield U.S. Federal Treasury Notes and government-backed Federal Agency Notes and a decrease of \$507 attributable to a decrease in our average cash and short-term investments held during the comparative period.

**Liquidity and Capital Resources**

Currently, we require cash to fund our working capital needs, to purchase capital assets and to pay our operating lease obligations.

The primary sources of our liquidity have been:

- equity financing, including approximately \$29,118 of net proceeds from our public offering on November 16, 2009, of 3,450,000 shares of our common stock at an offering price of \$9.00 per share;
- our strategic alliance with ADM;
- government grants; and
- interest earned on cash and short-term investments.

We have incurred significant expenses relating to our research and development efforts. As a result, we have incurred net losses since our inception. As of December 31, 2009, we had an accumulated deficit of \$168,074. Our total unrestricted cash, cash equivalents and short-term

investments as of December 31, 2009 were \$92,202 as compared to \$91,096 at December 31, 2008. As of December 31, 2009, we had no outstanding debt.

Our cash and cash equivalents at December 31, 2009 were held for working capital purposes. We do not enter into investments for trading or speculative purposes. The primary objective of our investment activities is to preserve our capital. As of December 31, 2009 we had restricted cash of \$593. Restricted cash consists of \$493 held in connection with the lease agreement for our Erie Street facility in Cambridge, Massachusetts and \$100 held in connection with our corporate credit card program. Short-term investments are made in accordance with our corporate investment policy, as approved by our Board of Directors. Investments are limited to high quality corporate debt, U.S. Treasury bills and notes, bank debt obligations, municipal debt obligations and asset-backed securities. The policy establishes maturity limits, concentration limits, and liquidity requirements. At December 31, 2009, we were in compliance with this policy.

We believe that our cash, cash equivalents and short-term investments and interest we earn on these balances, will be sufficient to meet our anticipated cash requirements, including cash requirements with respect to the commercial launch of Mirel, for at least the next 24 months. If our available cash, cash equivalents, and short-term investments are insufficient to satisfy our liquidity requirements, or if we develop additional products, we may need to sell additional equity or debt securities or obtain a credit facility. The sale of additional equity and debt securities may result in additional dilution to our stockholders. If we raise additional funds through the issuance of debt securities or preferred stock, these securities could have rights senior to those of our common stock and could contain covenants that would restrict our operations. We may require additional capital beyond our currently forecasted amounts. Any such required additional capital may not be available on reasonable terms, if at all. If we are unable to obtain additional financing, we may be required to reduce the scope of, delay or eliminate some or all of our planned research, development and commercialization activities, which could harm our business.

Net cash used in operating activities was \$25,759 for the year ended December 31, 2009 compared to net cash used in operating activities of \$18,392 and \$10,900 during 2008 and 2007, respectively. The cash used during 2009 primarily reflects the net loss for the period offset by an increase in deferred revenue of \$4,519, and non-cash charges including stock-based compensation expense of \$4,653, depreciation expense of \$2,734, and a company 401(k) matching stock contribution of \$428. The increase in cash used for operating activities during the year ended December 31, 2009 compared to the year ended December 31, 2008 was primarily due to an increase in net loss of \$1,952, and a decrease of \$4,860 in quarterly support and pre-commercial manufacturing cost sharing support payments received from our Commercial Alliance with ADM. The decrease in quarterly support payments from four in 2008 to the final two in 2009 was in accordance with our joint venture agreement. Cost sharing payments declined in 2009 primarily as a result of improvements made in our production process as we continued to focus our attention on reducing manufacturing costs, moving certain manufacturing processes in-house and improving the quality of our pre-commercial manufacturing material. The increase in cash used in operating activities during the year ended December 31, 2008 compared the respective period in 2007 was primarily due to an increase in net loss.

After the Commercial Phase of the ADM alliance begins, Telles will reimburse us for the costs of services provided pursuant to the Commercial Alliance Agreement, including research and development, product development and sales and marketing. During the transition period between the initial start-up of the Commercial Manufacturing Facility, which occurred in December 2009, and the commencement of the Commercial Phase, we will continue to bear these costs. If there are difficulties, delays or other unforeseen issues with the start-up of the Commercial Manufacturing Facility or with the ramp-up of commercial sales from the Commercial Manufacturing Facility, we may incur additional unreimbursed pilot manufacturing, product development, sales and marketing costs until the Commercial Phase of the alliance begins.

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Net cash of \$18,855 was used for investing activities for the year ended December 31, 2009, compared to net cash of \$21,089 and \$5,804 provided by investing activities for the years ended December 31, 2008 and 2007, respectively. Net cash used for investing activities, during the year ended December 31, 2009, included \$2,017 used to purchase equipment and \$119,956 used to purchase short-term investments, partially offset by \$103,048 provided by the sale and maturity of short-term investments. Property and equipment purchases for the year ended December 31, 2009 mainly consisted of equipment for research and development purposes. The net cash used for investing purposes represents the additional purchases in short-term investments that resulted after the receipt of the proceeds from our common stock offering in November 2009.

Net cash of \$29,234 was provided by financing activities for the year ended December 31, 2009, compared to net cash of \$811 and \$2,600 provided by financing activities during 2008 and 2007. Net cash provided by financing activities for the year ended December 31, 2009 primarily reflects the net proceeds of \$29,118 provided from our common stock offering that was completed in November 2009.

**Off-Balance Sheet Arrangement**

As of December 31, 2009, we had no off-balance sheet arrangements as defined in Item 303(a)(4) of the Securities and Exchange Commission's Regulation S-K.

**Contractual Obligations**

The following table summarizes our contractual obligations at December 31, 2009:

	Payments Due by Period				
	Total	Less than 1 year	2-3 years	4-5 years	More than 5 years
Operating lease obligations	\$ 4,797	\$ 1,218	\$ 2,262	\$ 1,317	\$ —
Purchase obligations	308	168	90	50	—
Total	\$ 5,105	\$ 1,386	\$ 2,352	\$ 1,367	\$ —

Our lease obligations relate to current office and laboratory space. The lease for our primary facility located on Erie Street in Cambridge Massachusetts will expire in May 2014. We have the option to extend this lease for two additional five-year periods at then current market rates.

On March 30, 2007 we entered into a rental agreement to lease additional office and laboratory space in Lowell, Massachusetts to support our Telles joint venture with ADM. The term of the lease commenced on June 18, 2007 and will expire five years from the start date. We have the option to extend this lease for an addition five-year period at then current market rates.

On April 30, 2008 we entered into a rental agreement to sublease additional office space in Cambridge, Massachusetts. The term of the sublease commenced on May 1, 2008 and will expire March 31, 2010. We expect to enter into a new lease for the same space beginning April 1, 2010.

**Related Party Transactions**

We entered into sublicense agreements in 1999 and 2003 with Tepha, Inc. ("Tepha"), a related party, to sublicense certain technology to Tepha. The sublicenses contains provisions for us to receive sublicense maintenance fees, milestone payments and royalties on sublicense product and sublicensing revenues received by Tepha.

We routinely undertake transactions with ADM in connection with our collaborative Commercial Alliance Agreement for the development and commercialization of Mirel. ADM and we have

established Telles, a joint venture company owned equally by us, to undertake this commercialization effort.

See Note 8 to our consolidated financial statements for a full description of our related party transactions.

### **Effects of Inflation**

Our assets are primarily monetary, consisting of cash, cash equivalents and short-term investments. Because of their liquidity, these assets are not directly affected by inflation. Since we intend to retain and continue to use our equipment, furniture and fixtures and leasehold improvements, we believe that the incremental inflation related to replacement costs of such items will not materially affect our operations. However, the rate of inflation affects our expenses, such as those for employee compensation, which could increase our level of expenses and the rate at which we consume our financial resources.

### **Recent Accounting Standards Changes**

#### *Recently Adopted Accounting Standards*

In January 2009, we implemented a newly issued accounting standard for business combinations. This standard requires an acquiring company to measure all assets acquired and liabilities assumed, including contingent considerations and all contractual contingencies, at fair value as of the acquisition date. In addition, an acquiring company is required to capitalize in process research and development and either amortize it over the life of the product, or write it off if the project is abandoned or impaired. The adoption of this standard did not impact our financial position or results of operations as it is applicable to acquisitions completed after January 1, 2009 and we did not complete any business combination transactions during the twelve months ended December 31, 2009.

In April 2009, a new accounting standard was issued to provide greater clarity about the credit and noncredit component of an other-than-temporary impairment event and to more effectively communicate when an other-than-temporary impairment event has occurred. This standard applies to debt securities. This standard was effective for periods ending after June 15, 2009. The adoption of this standard did not have a material effect on our financial position, results of operations or cash flows.

In April 2009, a new accounting standard was issued to require disclosures about fair value of financial instruments in interim as well as in annual financial statements. This standard was effective for periods ending after June 15, 2009. The adoption of this standard did not have a material effect on our financial position, results of operations or cash flows.

In June 2009, a new accounting standard was issued that establishes the hierarchy of Generally Accepted Accounting Principles that are to be used as the source of authoritative accounting principles recognized by the Financial Accounting Standards Board for non-governmental entities in preparation of financial statements in conformity with GAAP in the United States. This standard was effective for interim and annual periods ending after September 15, 2009. The adoption of this standard did not have a material effect on our financial position, results of operations or cash flows.

In August 2009, a new accounting standard was issued for measuring liabilities at fair value. This standard provides clarification that, in circumstances in which a quoted price in an active market for the identical liability is not available, a reporting entity is required to measure fair value using one or more of the following methods: (1) a valuation technique that uses (a) the quoted price of the identical liability when traded as an asset or (b) quoted prices for similar liabilities or similar liabilities when traded as assets; and/or (2) a valuation technique that is consistent with GAAP. This standard also clarifies that when estimating the fair value of a liability, a reporting entity is not required to adjust to



include inputs relating to the existence of transfer restrictions on that liability. The adoption of this standard did not have a material effect on our financial position, results of operations or cash flows.

*Recently Issued Accounting Standards*

In October 2009, a new accounting consensus was issued for multiple-deliverable revenue arrangements. This consensus amends existing revenue recognition accounting standards. This consensus provides accounting principles and application guidance on whether multiple deliverables exist, how the arrangement should be separated and the consideration allocated. This guidance eliminates the requirement to establish the fair value of undelivered products and services and instead provides for separate revenue recognition based upon management's estimate of the selling price for an undelivered item when there is no other means to determine the fair value of that undelivered item. Previously the existing accounting consensus required that the fair value of the undelivered item be the price of the item either sold in a separate transaction between unrelated third parties or the price charged for each item when the item is sold separately by the vendor. Under the existing accounting consensus, if the fair value of all of the elements in the arrangement was not determinable, then revenue was deferred until all of the items were delivered or fair value was determined. This new approach is effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010. We are in the process of evaluating whether the adoption of this standard will have a material effect on its financial position, results of operations or cash flows.

In June 2009, a new accounting standard was issued relating to the consolidation of variable interest entities. This statement addresses (1) the effects on certain provisions on existing accounting standards as a result of the elimination of the qualifying special-purpose entity concept and (2) constituent concerns about the application of certain key provisions of existing accounting standards, including those in which the accounting and disclosures under existing accounting standards do not always provide timely and useful information about an enterprise's involvement in a variable interest entity. This standard is effective for periods beginning after November 15, 2009. We concluded that the adoption of this standard will not have a material effect on our financial position, results of operations or cash flows.

In June 2009, a new accounting standard was issued relating to information that a reporting entity must provide in its financial reports about a transfer of financial assets; the effects of a transfer on its financial position, financial performance, and cash flows; and a transferor's continuing involvement in transferred financial assets. Specifically, among other aspects, this standard amends previously issued accounting guidance, modifies the financial-components approach and removes the concept of a qualifying special purpose entity when accounting for transfers and servicing of financial assets and extinguishments of liabilities, and removes the exception from applying the general accounting principles for the consolidation of variable interest entities that are qualifying special-purpose entities. This new accounting standard is effective for transfers of financial assets occurring on or after January 1, 2010. The adoption of this standard will not have an impact on our financial position or results of operations.

**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK**

Our exposure to market risk is confined to our cash, cash equivalents and marketable securities. The unrestricted cash and cash equivalents and marketable securities are held for working capital purposes. Our primary investment objective is capital preservation, with a secondary objective of generating income on such capital. We do not enter into investments for trading or speculative purposes.

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*Interest Rate Risk.*

We invest in high-quality financial instruments, primarily money market funds, federal agency notes, U.S. treasury notes, investment-grade commercial paper, and corporate debt securities. All of our interest-bearing securities are subject to interest rate risk and could decline in value if interest rates fluctuate. Because of the short-term maturities of our cash equivalents and short-term investments, we do not believe that an increase in market rates would have any significant impact on the realized value of our marketable securities. However, in a declining interest rate environment, as short-term investments mature, reinvestment occurs at less favorable interest rates which would negatively impact our investment income. Exposure to market rate risk for changes in interest rates relates to our cash, cash equivalents and short-term investments, totaling \$92,202 at December 31, 2009. Based on a hypothetical 10% adverse movement in interest rates, the potential annual losses in future earnings and cash flows are estimated to be \$77.

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

The consolidated financial statements and related financial statement schedules required to be filed are indexed on page F-1 and are incorporated herein.

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

None.

**ITEM 9A. CONTROLS AND PROCEDURES**

**Effectiveness of Disclosure Controls and Procedures**

As of the end of the period covered by this Annual Report on Form 10-K, under the supervision of our Chief Executive Officer and our Chief Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures, as such term is defined in Rule 13a-15(e) and Rule 15d-15(e) under the Exchange Act. Based on this evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that as of December 31, 2009 our disclosure controls and procedures are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act (1) is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms, and (2) is accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Our disclosure controls and procedures include components of our internal control over financial reporting. Management's assessment of the effectiveness of our internal control over financial reporting is expressed at the level of reasonable assurance because a control system, no matter how well designed and operated, can provide only reasonable, but not absolute, assurance that the control system's objectives will be met.

**Management's Annual Report on Internal Control over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the

company are made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

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

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2009. In making this assessment, management used the criteria set forth in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on its assessment of internal control over financial reporting, management has concluded that, as of December 31, 2009, our internal control over financial reporting was effective to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

The effectiveness of our internal control over financial reporting as of December 31, 2009 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

#### **Changes in Internal Control over Financial Reporting**

There have been no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) of the Exchange Act that occurred during our last fiscal quarter in the period covered by this Annual Report on Form 10-K that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

#### **ITEM 9B. OTHER INFORMATION**

Our policy governing transactions in our securities by our directors, officers, and employees permits our officers, directors, employees, and entities affiliated with our directors to enter into trading plans complying with Rule 10b5-1 under the Exchange Act, as amended. We have been advised that during the quarter ended December 31, 2009, Anthony J. Sinskey, a member of our Board of Directors, entered into a trading plan in accordance with Rule 10b5-1 and our policy governing transactions in our securities. We undertake no obligation to update or revise the information provided herein, including revisions or termination of an established trading plan.

### **PART III**

Pursuant to General Instructions G to Form 10-K, the information required for Part III, Items 10, 11, 12, 13 and 14, is incorporated herein by reference from the Company's proxy statement for the Annual Meeting of Stockholders to be held on May 27, 2010 which is expected to be filed not later than 120 days after the fiscal year end covered by this Form 10-K.

**PART IV**

**ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES**

(a) The following documents are filed as part of this Report:

(1) **Financial Statements**

See Index to Financial Statements on page F-1.

(2) **Supplemental Schedules**

All schedules have been omitted because the required information is not present in amounts sufficient to require submission of the schedule, or because the required information is included in the consolidated financial statements or notes thereto.

(3) **Exhibits**

See Item 14(b) below.

(b) The following exhibits are filed as part of, or incorporated by reference into, this annual report on Form 10-K:

<b>Exhibit Number</b>	<b>Description</b>
3.1(1)	Amended and Restated Certificate of Incorporation of the Registrant
3.3(1)	Amended and Restated By-laws of the Registrant
3.4(8)	Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of Metabolix, Inc. classifying and designating the Series A Junior Participating Cumulative Preferred Stock
4.1(1)	Specimen Stock Certificate for shares of the Registrant's Common Stock
4.2(8)	Shareholder Rights Agreement, dated as of July 7, 2009, between Metabolix, Inc. and American Stock Transfer & Trust Company, LLC, as Rights Agent
10.1†(1)	1995 Stock Plan
10.1.1†(1)	1995 Stock Plan, Form of Incentive Stock Option Agreement
10.1.2†(1)	1995 Stock Plan, Form of Non-Qualified Stock Option Agreement
10.2†(1)	2005 Stock Plan
10.2.1†(1)	2005 Stock Plan, Form of Incentive Stock Option Agreement
10.2.2†(1)	2005 Stock Plan, Form of Non-Qualified Stock Option Agreement
10.3†(1)	2006 Stock Option and Incentive Plan
10.3.1†(1)	2006 Stock Option and Incentive Plan, Form of Incentive Stock Option Agreement
10.3.2†(1)	2006 Stock Option and Incentive Plan, Form of Non-Qualified Stock Option Agreement
10.3.3†(1)	2006 Stock Option and Incentive Plan, Form of Director Non-Qualified Stock Option Agreement
10.4#(1)	License Agreement between the Registrant and Massachusetts Institute of Technology dated July 15, 1993, as amended
10.5#(1)	Commercial Alliance Agreement by and among the Registrant, ADM/Metabolix Sales Company, LLC and ADM Polymer Corporation dated July 14, 2006

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<b>Exhibit Number</b>	<b>Description</b>
10.6#(1)	Operating Agreement of ADM/Metabolix Sales Company, LLC by and between the Registrant and ADM Polymer Corporation dated July 14, 2006
10.7(1)	Letter Agreement by and between the Registrant and Archer Daniels Midland Company dated November 3, 2004
10.8#(1)	Technology Alliance and Option Agreement by and between the Registrant and ADM Polymer Corporation dated as of November 4, 2004
10.9#(1)	First Amendment to Technology Alliance and Option Agreement by and between the Registrant and ADM Polymer Corporation dated as of September 8, 2005
10.10†(6)	Employment Agreement between the Registrant and Richard P. Eno dated February 20, 2008
10.10.1†(10)	First Amendment to Employment Agreement between the Registrant and Richard P. Eno executed December 18, 2008
10.11†(1)	Employment Agreement between the Registrant and Oliver P. Peoples dated July 20, 2006
10.11.1†(10)	First Amendment to Employment Agreement between the Registrant and Oliver P. Peoples executed December 19, 2008
10.11.2†(10)	Second Amendment to Employment Agreement between the Registrant and Oliver P. Peoples executed February 25, 2009
10.12†(7)	Employment Agreement between the Registrant and Joseph D. Hill executed March 21, 2008
10.12.1†(10)	First Amendment to Employment Agreement between the Registrant and Joseph D. Hill executed December 23, 2008
10.13†(10)	Change of Control Severance Agreement between the Registrant and Sarah P. Cecil executed December 18, 2008
10.14†(10)	Employment Agreement between the Registrant and Robert E. Engle executed December 19, 2008
10.16†(9)	Employment Agreement between the Registrant and Johan van Walsem executed July 9, 2009
10.15†(1)	Form of Employee Noncompetition, Nondisclosure and Inventions Agreement with Oliver P. Peoples and Johan van Walsem
10.16†(1)	Form of Noncompetition, Nondisclosure and Inventions Agreement between the Registrant, Richard P. Eno, Joseph D. Hill, Robert E. Engle and Sarah P. Cecil
10.17†(1)	Form of Indemnification Agreement between the Registrant and its Directors and Officers
10.18(1)	Lease Agreement between the Registrant and 21 Erie Realty Trust dated as of December 29, 2003 for the premises located at 21 Erie Street, Cambridge, Massachusetts 02139
10.19(3)	Lease between Fortune Wakefield, LLC ("Landlord") and Metabolix, Inc. dated March 30, 2007
10.20(1)	Fifth Amended and Restated Stockholders Agreement by and among the Registrant and certain of its stockholders dated January 19, 2006
10.21(1)	Amendment No. 1 to Fifth Amended and Restated Stockholders Agreement by and among the Registrant and certain of its stockholders dated July 12, 2006

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<u>Exhibit Number</u>	<u>Description</u>
10.22(1)	Stock Purchase Agreement between the Registrant and Archer Daniels Midland Company dated July 12, 2006
10.23#(1)	License Agreement between the Registrant and Tepha, Inc. dated as of October 1, 1999
10.24#(1)	License Agreement between the Registrant and Tepha, Inc. dated as of September 9, 2003
10.25#(6)	Exclusive License Agreement between the Registrant and Abbott Laboratories dated November 12, 2007
21.1(2)	Subsidiaries of the Registrant
23.1*	Consent of PricewaterhouseCoopers LLP, an independent registered public accounting firm
24.1	Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K)
31.1*	Certification Pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934
31.2*	Certification Pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934
32.1*	Certification Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

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† Indicates a management contract or any compensatory plan, contract or arrangement.

# Confidential treatment has been granted for certain portions of this document pursuant to a Commission order. Such provisions have been filed separately with the Commission.

\* Filed herewith

- (1) Incorporated by reference herein to the exhibits to the Company's Registration Statement on Form S-1 (File No. 333-135760)
- (2) Incorporated by reference herein to the exhibits to the Company's 2006 Annual Report on Form 10-K (File No. 001-33133)
- (3) Incorporated by reference herein to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2007 (File No. 001-33133)
- (4) Incorporated by reference herein to the exhibits to the Company's Report on Form 8-K/A filed June 19, 2007 (File No. 001-33133)
- (5) Incorporated by reference herein to the exhibits to the Company's Report on Form 8-K/A filed May 22, 2007 (File No. 001-33133)
- (6) Incorporated by reference herein to the exhibits to the Company's 2007 Annual Report on Form 10-K filed March 13, 2008 (File No. 001-33133)
- (7) Incorporated by reference herein to the exhibits to the Company's Report on Form 8-K filed March 24, 2008 (File No. 001-33133)
- (8) Incorporated herein by reference to the exhibits to the Company's Registration Statement on Form 8-A on July 8, 2009 (File No. 001-33133)
- (9) Incorporated by reference herein to the exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2009 (File No. 001-33133)
- (10) Incorporated by reference herein to the exhibits to the Company's 2008 Annual Report on Form 10-K filed March 12, 2009 (File No. 001-33133)



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<u>Name</u>	<u>Title</u>	<u>Date</u>
<hr/> <i>/s/ EDWARD M. MULLER</i> <hr/> Edward M. Muller	Director	March 11, 2010
<hr/> <i>/s/ OLIVER P. PEOPLES</i> <hr/> Oliver P. Peoples	Director	March 11, 2010
<hr/> <i>/s/ ANTHONY J. SINSKEY</i> <hr/> Anthony J. Sinskey, Sc.D.	Director	March 11, 2010
<hr/> <i>/s/ MATTHEW STROBECK</i> <hr/> Matthew Strobeck	Director	March 11, 2010
<hr/> <i>/s/ ROBERT L. VAN NOSTRAND</i> <hr/> Robert L. Van Nostrand	Director	March 11, 2010



**METABOLIX, INC.**

**Index to Consolidated Financial Statements**

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<a href="#">Consolidated Balance Sheets as of December 31, 2009 and 2008</a>	<a href="#">F-3</a>
<a href="#">Consolidated Statements of Operations for the Years Ended December 31, 2009, 2008, and 2007</a>	<a href="#">F-4</a>
<a href="#">Consolidated Statements of Cash Flows for the Years Ended December 31, 2009, 2008, and 2007</a>	<a href="#">F-5</a>
<a href="#">Consolidated Statements of Stockholders' Equity and Comprehensive Loss for the Years Ended December 31, 2009, 2008, and 2007</a>	<a href="#">F-6</a>
<a href="#">Notes to Consolidated Financial Statements</a>	<a href="#">F-7</a>

**Report of Independent Registered Public Accounting Firm**

To the Board of Directors and Stockholders of Metabolix, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, of stockholders' equity and comprehensive loss, and of cash flows present fairly, in all material respects, the financial position of Metabolix, Inc. and its subsidiary at December 31, 2009 and 2008, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2009 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2009, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts

March 11, 2010

**METABOLIX, INC.**  
**CONSOLIDATED BALANCE SHEETS**  
**(In thousands, except share and per share amounts)**

	December 31, 2009	December 31, 2008
<b>Assets</b>		
Current Assets:		
Cash and cash equivalents	\$ 10,814	\$ 26,194
Short-term investments	81,388	64,902
Accounts receivable	19	159
Due from related parties	365	—
Unbilled receivables	3	56
Prepaid expenses and other current assets	764	530
Total current assets	93,353	91,841
Restricted cash	593	593
Property and equipment, net	3,513	4,388
Other assets	95	124
Total assets	\$ 97,554	\$ 96,946
<b>Liabilities and Stockholders' Equity</b>		
Current Liabilities:		
Accounts payable	\$ 626	\$ 858
Accrued expenses	3,746	3,587
Current portion of deferred rent	165	165
Short-term deferred revenue	25	—
Total current liabilities	4,562	4,610
Deferred rent	552	717
Long-term deferred revenue	37,299	32,440
Other long-term liabilities	97	88
Total liabilities	42,510	37,855
Commitments and contingencies (Note 7)		
Stockholders' Equity:		
Preferred stock (\$0.01 par value per share); 5,000,000 shares authorized; no shares issued or outstanding	—	—
Common stock (\$0.01 par value per share); 100,000,000 shares authorized at December 31, 2009 and 2008, 26,514,076 and 22,962,628 shares issued and outstanding at December 31, 2009 and 2008, respectively	265	230
Additional paid-in capital	222,831	188,532
Accumulated other comprehensive income	22	446
Accumulated deficit	(168,074)	(130,117)
Total stockholders' equity	55,044	59,091
Total liabilities and stockholders' equity	\$ 97,554	\$ 96,946

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

**METABOLIX, INC.****CONSOLIDATED STATEMENTS OF OPERATIONS****(In thousands, except share and per share amounts)**

	Years Ended December 31,		
	2009	2008	2007
Revenue:			
Research and development revenue	\$ 152	\$ 229	\$ 147
License fee revenue	10	—	500
License fee and royalty revenue from related parties	120	120	157
Grant revenue	1,143	1,206	879
Total revenue	1,425	1,555	1,683
Operating expense:			
Research and development expenses, including cost of revenue	24,471	24,667	19,901
Selling, general, and administrative expenses	15,683	15,780	15,598
Total operating expenses	40,154	40,447	35,499
Loss from operations	(38,729)	(38,892)	(33,816)
Other income:			
Interest income, net	772	2,887	5,941
Net loss	\$ (37,957)	\$ (36,005)	\$ (27,875)
Net loss per share:			
Basic and Diluted	\$ (1.62)	\$ (1.58)	\$ (1.27)
Number of shares used in per share calculations:			
Basic and Diluted	23,435,264	22,839,913	21,997,397

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

## METABOLIX, INC.

## CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended December 31,		
	2009	2008	2007
<b>Cash flows from operating activities</b>			
Net loss	\$ (37,957)	\$ (36,005)	\$ (27,875)
Adjustments to reconcile net loss to cash used in operating activities:			
Depreciation and amortization	2,734	3,731	1,451
Charge for 401(k) company common stock match	428	400	276
Stock-based compensation	4,653	4,439	4,559
Gain on sale of equipment	(70)	—	—
Changes in operating assets and liabilities:			
Accounts receivable	140	(26)	(75)
Unbilled receivable	53	142	(108)
Due from related parties	—	122	(111)
Prepaid expenses and other assets	(205)	89	(67)
Accounts payable	(232)	516	(1,305)
Accrued expenses	334	(1,031)	2,652
Deferred rent and other long-term liabilities	(156)	(158)	(166)
Deferred revenue	4,519	9,389	9,869
Net cash used in operating activities	<u>(25,759)</u>	<u>(18,392)</u>	<u>(10,900)</u>
<b>Cash flows from investing activities</b>			
Purchase of property and equipment	(2,017)	(794)	(4,662)
Proceeds from sale of equipment	70	—	—
Change in restricted cash	—	(95)	—
Purchase of short-term investments	(119,956)	(132,826)	(190,862)
Proceeds from sale and maturity of short-term investments	103,048	154,804	201,328
Net cash provided by (used in) investing activities	<u>(18,855)</u>	<u>21,089</u>	<u>5,804</u>
<b>Cash flows from financing activities</b>			
Proceeds from options exercised	116	811	2,459
Proceeds from warrants exercised	—	—	141
Proceeds from public stock offering, net of offering costs of \$1,932	29,118	—	—
Net cash provided by financing activities	<u>29,234</u>	<u>811</u>	<u>2,600</u>
Net increase (decrease) in cash and cash equivalents	<u>(15,380)</u>	<u>3,508</u>	<u>(2,496)</u>
Cash and cash equivalents at beginning of period	26,194	22,686	25,182
Cash and cash equivalents at end of period	<u>\$ 10,814</u>	<u>\$ 26,194</u>	<u>\$ 22,686</u>

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

METABOLIX, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE LOSS

(In thousands, except share amounts)

	Common Stock		Additional Paid-In Capital	Deferred Compensation	Accumulated other Comprehensive Income	Accumulated Deficit	Stockholders' Equity	Total Comprehensive Loss
	Shares	Par Value						
<b>Balance, December 31, 2006</b>	20,574,412	\$ 206	\$ 175,803	\$ (212)	\$ 28	\$ (66,237)	\$ 109,588	
Exercise of common stock warrants	975,479	10	131				141	
Exercise of common stock options	1,021,354	10	2,449				2,459	
Non-cash stock-based compensation expense			4,347	212			4,559	
Issuance of common stock for 401k match	4,866	—	122				122	
Change in unrealized gain on investments					208		208	208
Net loss						(27,875)	(27,875)	(27,875)
<b>Balance, December 31, 2007</b>	<u>22,576,111</u>	<u>226</u>	<u>182,852</u>	<u>—</u>	<u>236</u>	<u>(94,112)</u>	<u>89,202</u>	
2007 Comprehensive loss								\$ (27,667)
Exercise of common stock warrants	10,146	—	—				—	
Exercise of common stock options	343,837	3	808				811	
Non-cash stock-based compensation expense			4,439				4,439	
Issuance of common stock for 401k match	32,534	1	433				434	
Change in unrealized gain on investments					210		210	210
Net loss						(36,005)	(36,005)	(36,005)
<b>Balance, December 31, 2008</b>	<u>22,962,628</u>	<u>\$ 230</u>	<u>\$ 188,532</u>	<u>\$ —</u>	<u>\$ 446</u>	<u>\$ (130,117)</u>	<u>\$ 59,091</u>	
2008 Comprehensive loss								\$ (35,795)
Exercise of common stock options	51,930	—	116				116	
Non-cash stock-based compensation expense			4,653				4,653	
Issuance of common stock for 401k match	49,518	—	447				447	
Issuance of common stock upon public offering, net of offering costs of \$1,932	3,450,000	35	29,083				29,118	
Change in unrealized gain on investments					(424)		(424)	(424)
Net loss						(37,957)	(37,957)	(37,957)
<b>Balance, December 31, 2009</b>	<u>26,514,076</u>	<u>\$ 265</u>	<u>\$ 222,831</u>	<u>\$ —</u>	<u>\$ 22</u>	<u>\$ (168,074)</u>	<u>\$ 55,044</u>	
2009 Comprehensive loss								\$ (38,381)

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

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**

**(In thousands, except for share and per share amounts)**

**1. Nature of Business**

Metabolix, Inc. (the "Company") uses advanced biotechnology to develop environmentally sustainable, economically attractive alternatives to petrochemical-based plastics, energy and chemicals. The Company has core capabilities in microbial genetics, fermentation process engineering, chemical engineering, polymer science, plant genetics and botanical science, and has assembled these capabilities in a way that has allowed the integration of biotechnology with chemical engineering and industrial practice. The Company is commercializing its first product, Mirel™ bioplastic, through Telles LLC ("Telles"), the Company's joint venture with Archer Daniels Midland Company ("ADM"). The Company is subject to risks common to companies in the biotechnology industry including, but not limited to, development by the Company's competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, the need to obtain additional funding, and compliance with government regulations.

**2. Summary of Significant Accounting Policies**

**Principles of Consolidation**

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiary, Metabolix Securities Corporation. All significant intercompany transactions were eliminated. Telles is not being consolidated by the Company.

**Use of Estimates**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

**Cash and Cash Equivalents**

The Company considers all highly liquid investments purchased with an original maturity date of ninety days or less at the date of purchase to be cash equivalents.

**Short-Term Investments**

The Company considers all highly liquid investments with a maturity date of one year or less at the balance sheet date to be short-term investments. At December 31, 2009 short-term investments consisted of U.S. Treasury securities and debt securities of the U.S. government. Short-term investments consisted of U.S. Treasury securities, debt securities of the U.S. government and corporate debt at December 31, 2008. All short-term investments were classified as available for sale as of December 31, 2009 and 2008. See Note 4 for further discussion on short-term investments.

**Restricted Cash**

The Company had restricted cash in the amount of \$593 at December 31, 2009 and 2008. Restricted cash as of December 31, 2009 and 2008 consisted of a certificate of deposit supporting a

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**2. Summary of Significant Accounting Policies (Continued)**

letter of credit, in the amount of \$493, held in connection with one of the Company's leased facilities and \$100 held as security for the Company's corporate credit card program.

**Comprehensive Income (Loss)**

Comprehensive income (loss) is comprised of net income (loss) and certain changes in stockholders' equity that are excluded from net income (loss). The Company includes unrealized gains and losses on marketable securities in other comprehensive income (loss).

**Concentration of Credit Risk**

Financial instruments that potentially subject the Company to concentrations of credit risk primarily consist of cash and cash equivalents and short-term investments. The Company primarily invests its excess cash and cash equivalents in money market funds, federal agency notes, U.S. treasury notes, investment-grade commercial paper, and corporate debt securities.

**Fair Value Measurements**

The carrying amounts of the Company's financial instruments as of December 31, 2009 and 2008, which include cash equivalents, accounts receivable, unbilled receivables, accounts payable, and accrued expenses, approximate their fair values due to the short-term nature of these instruments. See Note 15 for further discussion on fair value measurements.

**Segment Information**

The accounting guidance for segment reporting establishes standards for reporting information on operating segments in annual financial statements. The Company operates in one segment, which is the business of developing and commercializing technologies for the production of polymers and chemicals in plants and in microbes. The Company's chief operating decision-maker reviews the Company's operating results on a consolidated basis and manages operations as a single operating segment located, and operated, in the United States of America. All revenue is earned, and all assets are held, in the United States of America.

**Property and Equipment**

Property and equipment are stated at cost less accumulated depreciation. Repairs and maintenance are charged to operations as incurred. Gains and losses on the disposition of equipment are recorded in net income or loss and the related cost and accumulated depreciation are removed from the respective accounts. Depreciation is computed using the straight-line method over the estimated useful lives as follows:

<u>Asset Description</u>	<u>Estimated Useful Life</u>
Equipment	2.5 - 3 years
Furniture and Fixtures	5
Software	3
Leasehold improvements	Shorter of useful life or term of lease



**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**2. Summary of Significant Accounting Policies (Continued)**

The Company accounts for operating lease incentive payments received from a lessor in accordance with the accounting standard on accounting for leases. The Company records landlord incentive payments received as deferred rent and amortizes these amounts as reductions to lease expense over the lease term.

**Impairment of Long-Lived Assets**

The Company accounts for the impairment and disposal of long-lived assets in accordance with accounting guidance on accounting for the impairment or disposal of long-lived assets. The guidance requires that long-lived assets, such as property, plant and equipment, and purchased intangible assets subject to amortization, be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The guidance further requires that companies recognize an impairment loss only if the carrying amount of a long-lived asset is not recoverable based on its undiscounted future cash flows and measure an impairment loss as the difference between the carrying amount and fair value of the asset.

**Research and Development Expenses**

All costs associated with internal research and development as well as research and development services conducted for others are expensed as incurred. Research and development expenses include direct costs for salaries, employee benefits, subcontractors, facility related expenses, depreciation and stock-based compensation related to employees and non-employees involved in the Company's research and development. Costs related to revenue-producing contracts are recorded as research and development expenses. The Company's portion of the costs incurred by ADM relating to the pre-commercial manufacturing of Mirel are netted against amounts due from ADM and recorded as due from related party on the balance sheet.

**Revenue Recognition**

The Company recognizes revenue in accordance with the accounting standard on revenue recognition and revenue arrangements with multiple deliverables. Principal sources of revenue are government grants, license fees, royalty revenues and research and development payments that are primarily derived from collaborative agreements with other companies.

The Company's research and development revenue includes revenue from research services and delivery of specified materials or sample product produced from the research services. Revenue is recognized upon completion of the related services. Revenue related to product sales from the Company's pre-commercial manufacturing operations is generally recognized after a customer has received delivery and the customer's contractual acceptance period has ended. Product sales revenue has been recorded in research and development revenue in the consolidated statements of operations.

Fees to license the Company's proprietary and licensed technologies are recognized only after both the license period has commenced and the technology has been delivered. Royalty revenue is recognized when it becomes determinable and collectibility is reasonably assured; otherwise the Company recognizes revenue upon receipt of payment.

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**2. Summary of Significant Accounting Policies (Continued)**

The Company analyzes its multiple element arrangements to determine whether the elements can be separated and accounted for individually as separate units of accounting in accordance with the accounting guidance on revenue arrangements with multiple deliverables. The Company recognizes up-front license payments or technology access fees as revenue if the license or access fee has stand-alone value and the fair value of the undelivered items can be determined. If the license is considered to have stand-alone value but the fair value of any of the undelivered services or items cannot be determined, the license payments are initially deferred and recognized as revenue over the period of performance of undelivered services or as undelivered items are delivered.

Revenue from milestone payments related to arrangements under which the Company has continuing performance obligations is recognized as revenue upon achievement of the milestone only if all of the following conditions are met: the milestone payments are nonrefundable; achievement of the milestone was not reasonably assured at the inception of the arrangement; substantive effort is involved in achieving the milestone; and the amount of the milestone is reasonable in relation to the effort expended or the risk associated with the achievement of the milestone. If any of these conditions are not met, the milestone payments are deferred and recognized as revenue over the term of the arrangement as the Company completes its performance obligations.

Government grant revenue is earned as research expenses related to the grants are incurred.

**Intellectual Property Costs**

The Company includes all costs associated with the prosecution and maintenance of patents within general and administrative expenses in the consolidated statement of operations.

**Stock-Based Compensation**

The Company accounts for stock-based compensation costs in accordance with the accounting standards for stock-based compensation, which require that all share-based payments to employees be recognized in the statement of operations based on their fair values. Compensation cost is based on the grant-date fair value of the award and is recognized on a straight-line basis over the period during which an employee is required to provide service in exchange for the award. See Note 12 for a description of the types of stock-based awards granted, the compensation expense related to such awards and detail of equity-based awards outstanding.

**Basic and Diluted Net Loss per Share**

Basic net loss per share is computed by dividing net loss by the weighted-average number of common shares outstanding and warrants outstanding during the period that were previously issued for little or no consideration, excluding the dilutive effects of common stock equivalents. Common stock equivalents include stock options and certain warrants. Diluted net loss per share is computed by dividing net loss by the weighted-average number of dilutive common shares outstanding during the period. Diluted shares outstanding is calculated by adding to the weighted shares outstanding any potential (unissued) shares of common stock from outstanding stock options and warrants based on the treasury stock method. In periods when a net loss is reported, all common stock equivalents are excluded from the calculation because they would have an anti-dilutive effect, meaning the loss per

**METABOLIX, INC.****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)****(In thousands, except for share and per share amounts)****2. Summary of Significant Accounting Policies (Continued)**

share would be reduced. Therefore, in periods when a loss is reported there is no difference in basic and dilutive loss per share.

The number of shares of potentially dilutive common stock related to options and warrants that were excluded from the calculation of dilutive shares since the inclusion of such shares would be anti-dilutive for the three years ended December 31, 2009, 2008 and 2007, respectively, are shown below:

	Year ended December 31,		
	2009	2008	2007
Options	3,138,829	2,646,765	2,151,784
Warrants	4,086	4,086	69,343
Total	3,142,915	2,650,851	2,221,127

**Income Taxes**

The Company follows the provisions of the accounting guidance on accounting for income taxes which requires recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. A valuation allowance is provided to reduce the deferred tax asset to a level which, more likely than not, will be realized. See Note 13 for further discussion of income taxes.

**Recent Accounting Standards Changes***Recently Adopted Accounting Standards*

In January 2009, the Company implemented a newly issued accounting standard for business combinations. This standard requires an acquiring company to measure all assets acquired and liabilities assumed, including contingent considerations and all contractual contingencies, at fair value as of the acquisition date. In addition, an acquiring company is required to capitalize in process research and development and either amortize it over the life of the product, or write it off if the project is abandoned or impaired. The adoption of this standard did not impact the Company's financial position or results of operations as it is applicable to acquisitions completed after January 1, 2009 and the Company did not complete any business combination transactions during the twelve months ended December 31, 2009.

In April 2009, a new accounting standard was issued to provide greater clarity about the credit and noncredit component of an other-than-temporary impairment event and to more effectively communicate when an other-than-temporary impairment event has occurred. This standard applies to debt securities. This standard was effective for periods ending after June 15, 2009. The adoption of this standard did not have a material effect on the Company's financial position, results of operations or cash flows.

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**2. Summary of Significant Accounting Policies (Continued)**

In April 2009, a new accounting standard was issued to require disclosures about fair value of financial instruments in interim as well as in annual financial statements. This standard was effective for periods ending after June 15, 2009. The adoption of this standard did not have a material effect on the Company's financial position, results of operations or cash flows.

In June 2009, a new accounting standard was issued that establishes the hierarchy of Generally Accepted Accounting Principles that are to be used as the source of authoritative accounting principles recognized by the Financial Accounting Standards Board for non-governmental entities in preparation of financial statements in conformity with GAAP in the United States. This standard was effective for interim and annual periods ending after September 15, 2009. The adoption of this standard by the Company did not have a material effect on its financial position, results of operations or cash flows.

In August 2009, a new accounting standard was issued for measuring liabilities at fair value. This standard provides clarification that, in circumstances in which a quoted price in an active market for the identical liability is not available, a reporting entity is required to measure fair value using one or more of the following methods: (1) a valuation technique that uses (a) the quoted price of the identical liability when traded as an asset or (b) quoted prices for similar liabilities or similar liabilities when traded as assets; and/or (2) a valuation technique that is consistent with GAAP. This standard also clarifies that when estimating the fair value of a liability, a reporting entity is not required to adjust to include inputs relating to the existence of transfer restrictions on that liability. The adoption of this standard did not have a material effect on the Company's financial position, results of operations or cash flows.

*Recently Issued Accounting Standards*

In October 2009, a new accounting consensus was issued for multiple-deliverable revenue arrangements. This consensus amends existing revenue recognition accounting standards. This consensus provides accounting principles and application guidance on whether multiple deliverables exist, how the arrangement should be separated and the consideration allocated. This guidance eliminates the requirement to establish the fair value of undelivered products and services and instead provides for separate revenue recognition based upon management's estimate of the selling price for an undelivered item when there is no other means to determine the fair value of that undelivered item. Previously the existing accounting consensus required that the fair value of the undelivered item be the price of the item either sold in a separate transaction between unrelated third parties or the price charged for each item when the item is sold separately by the vendor. Under the existing accounting consensus, if the fair value of all of the elements in the arrangement was not determinable, then revenue was deferred until all of the items were delivered or fair value was determined. This new approach is effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010. The Company is in the process of evaluating whether the adoption of this standard will have a material effect on its financial position, results of operations or cash flows.

In June 2009, a new accounting standard was issued relating to the consolidation of variable interest entities. This statement addresses (1) the effects on certain provisions on existing accounting standards as a result of the elimination of the qualifying special-purpose entity concept and (2) constituent concerns about the application of certain key provisions of existing accounting

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**2. Summary of Significant Accounting Policies (Continued)**

standards, including those in which the accounting and disclosures under existing accounting standards do not always provide timely and useful information about an enterprise's involvement in a variable interest entity. This standard is effective for periods beginning after November 15, 2009. The Company concluded that the adoption of this standard will not have a material effect on its financial position, results of operations or cash flows.

In June 2009, a new accounting standard was issued relating to information that a reporting entity must provide in its financial reports about a transfer of financial assets; the effects of a transfer on its financial position, financial performance, and cash flows; and a transferor's continuing involvement in transferred financial assets. Specifically, among other aspects, this standard amends previously issued accounting guidance, modifies the financial-components approach and removes the concept of a qualifying special purpose entity when accounting for transfers and servicing of financial assets and extinguishments of liabilities, and removes the exception from applying the general accounting principles for the consolidation of variable interest entities that are qualifying special-purpose entities. This new accounting standard is effective for transfers of financial assets occurring on or after January 1, 2010. The adoption of this standard will not have an impact the Company's financial position or results of operations.

**3. Significant Collaborations**

Effective in the quarter ended March 31, 2009, the existing guidance relating to collaborative arrangements was amended. During the first quarter of fiscal year 2009, the Company implemented the new amendments which prescribe that certain transactions between collaborators be recorded in the income statement on either a gross or net basis, depending on the characteristics of the collaboration relationship, and provides for enhanced disclosure of collaborative relationships. The Company evaluated its collaborative agreements for proper income statement classification based on the nature of the underlying activity. If payments to and from collaborative partners are not within the scope of other authoritative accounting literature, the income statement classification for the payments is based on a reasonable, rational analogy to authoritative accounting literature that is applied in a consistent manner. Amounts due from collaborative partners related to development activities are generally reflected as a reduction of research and development expense because the performance of contract development services is not central to the Company's operations. For collaborations with commercialized products, if the Company is the principal, as defined in the amended guidance, it records revenue and the corresponding operating costs in the respective line items within the statement of operations. If the Company is not the principal, it records operating costs as a reduction of revenue. The amended guidance describes the principal as the party who is responsible for delivering the product or service to the customer, has latitude with establishing price, and has the risks and rewards of providing product or service to the customer, including inventory and credit risk. The adoption of amended guidance did not affect the financial position or results of operations of the Company.

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**3. Significant Collaborations (Continued)**

**ADM Collaboration**

*Technology Alliance and Option Agreement*

On November 3, 2004, the Company signed a Technology Alliance and Option Agreement with ADM Polymer Corporation, a subsidiary of ADM, to establish an alliance whereby the Company would provide technology and licenses thereto and research and development services, and ADM would provide manufacturing services and capital necessary to produce biobased plastic on a commercial scale.

The goal of the Technology Alliance and Option Agreement was to demonstrate the capabilities of the Company's fermentation and recovery technologies on a commercial scale and to prepare a master plan and budget for the construction of a 110 million pound Commercial Manufacturing Facility, which would provide the basis for entering into the next phase of the collaboration under a Commercial Alliance Agreement.

The Technology Alliance and Option Agreement provided ADM with an option (the "Option") to enter into a commercial alliance for further research, development, manufacture, use, and sale of bioplastic on the terms and conditions set forth in the Commercial Alliance Agreement (see below). On July 12, 2006, ADM exercised this Option.

Under the Technology Alliance and Option Agreement, ADM made a nonrefundable, noncreditable upfront payment of \$3,000 to the Company in 2004. In May 2006, the Company received a \$2,000 payment from ADM in recognition of achieving certain technical goals under the Technology Alliance and Option Agreement. Due to future obligations of the Company under the agreements for which fair value cannot be determined, including the requirement to provide research and development activities and recovery services under the Technology Alliance and Option Agreement and certain manufacturing services, including sales and marketing activities and other services under the Commercial Alliance Agreement, the entire upfront payment and milestone payments received have been recorded as deferred revenue. The Company's policy is to expense, as period costs, the direct and incremental costs incurred associated with this collaboration.

The Technology Alliance and Option Agreement was amended in 2005 to define certain cost sharing activities related to pre-commercial manufacturing, to change certain milestones and to make other minor modifications. In accordance with this amendment ADM agreed to reimburse the Company for one-half of certain costs incurred by the Company related to the Company's establishment of pre-commercial manufacturing capabilities. Amounts reimbursed totaled \$1,209, and were recorded as deferred revenue. Further reimbursements were made under the Commercial Alliance agreement as noted below.

*Commercial Alliance Agreement*

The Commercial Alliance Agreement specifies the terms and structure of the relationship between the Company and ADM. The primary function of this agreement is to establish the activities and obligations of the Company and ADM by which the parties will commercialize Mirel. These activities include: the establishment of a joint sales company, which has been named Telles, to market and sell Mirel, the construction of a manufacturing facility capable of producing 110 million pounds of material

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**3. Significant Collaborations (Continued)**

annually (the "Commercial Manufacturing Facility"), the licensing of technology to Telles and to ADM, and the conducting of various research, development, manufacturing, sales and marketing, compounding and administrative services by the parties.

Telles is a limited liability company, formed and equally owned by the Company and ADM, and is intended to: (i) serve as the commercial entity to establish and develop the commercial market for Mirel, and conduct the marketing and sales in accordance with the goals of the commercial alliance, (ii) assist in the coordination and integration of the manufacturing, compounding and marketing activities, and (iii) administer and account for financial matters on behalf of the parties. The Company and ADM each have 50% ownership and voting interest in Telles.

A summary of the key activities under this agreement is as follows: (i) ADM will arrange for, finance the construction of, and own, a facility in which it will manufacture Mirel under contract to Telles; (ii) the Company will either arrange for and finance the acquisition or construction of a facility in which it will compound Mirel or it will arrange for third parties to compound Mirel; and (iii) the Company, acting in the name and on behalf of Telles, will establish the initial market for Mirel. The Company will also continue its research and development efforts to further advance the technology and expand and enhance the commercial potential of Mirel. Subject to certain limitations, ADM will finance the working capital requirements of Telles.

The Commercial Alliance Agreement called for Telles to pay the Company quarterly support payments of \$1,575 each. The last of fourteen quarterly support payments was received as of June 30, 2009. All quarterly support payments received from ADM on behalf of Telles, totaling \$22,050, have been recorded as deferred revenue on the Company's balance sheet.

During the Construction Phase of the agreement all pre-commercial material production expenses incurred by ADM and the Company are shared equally. Accordingly, from the execution of this agreement in July 2006 through December 31, 2009, ADM has reimbursed the Company \$8,675. All amounts received from ADM, prior to the Commercial Phase, relating to this agreement are recorded as deferred revenue. The Company will continue to defer recognition of these and future payments received from ADM during the Construction Phase of the agreement.

The "Construction Phase" of the commercial alliance will end, and the "Commercial Phase" will begin, upon the achievement of a milestone referred to in the Commercial Alliance Agreement as "First Commercial Sale." Achievement of this milestone requires the sale by Telles to third parties of at least one million pounds of Mirel manufactured at the Commercial Manufacturing Facility. Qualifying sales must meet certain criteria, including a minimum order size, product must be accepted by the customers in accordance with the terms of their contracts, and payment must be received in order for such sales to contribute towards the First Commercial Sale milestone.

During the Commercial Phase of the agreement Telles will pay the Company royalties on sales of Mirel. In addition, if Telles engages the Company to perform certain services, and the Company accepts the service arrangement, Telles will reimburse the Company for the cost of the services provided pursuant to the Commercial Alliance Agreement.

While Telles is a fifty-fifty joint venture, ADM has advanced a disproportionate share of the financial capital needed to construct the Commercial Manufacturing Facility and to fund its activities.

**METABOLIX, INC.****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)****(In thousands, except for share and per share amounts)****3. Significant Collaborations (Continued)**

Therefore, under the agreement all profits, after payment of all royalties, reimbursements and fees, from Telles will first be distributed to ADM until ADM's cost of constructing the Commercial Manufacturing Facility and any negative net cash flow of Telles funded by ADM have been returned. Once ADM has recovered such amounts, the profits of Telles will be distributed in equal amounts to the parties.

The Commercial Alliance Agreement provides for expansion of the operations of Telles beyond the initial license of 110 million pound annual production through an equally-owned joint venture. While certain principles of the joint venture have been agreed to, the detailed terms and conditions will not be determined until a later date.

Revenue recognition for amounts deferred through December 31, 2009 is expected to commence when the Commercial Phase of the alliance begins. The deferred amounts will be recognized on a straight line basis over the estimated period, of approximately ten years, in which the Company's obligations are fulfilled in accordance with the Commercial Alliance Agreement. The Company also expects to receive payments from Telles for the compounding services it provides as well as royalty payments. The compounding payments and royalty payments will be due to the Company as Telles sells product to its customers. These payments will be recognized as revenue during the period in which they are earned.

The Commercial Alliance Agreement and related agreements include detailed provisions setting out the rights and obligations of the parties in the event of a termination of the Commercial Alliance Agreement. These provisions include the right for either party to terminate the Commercial Alliance Agreement upon a material default of a material obligation by the other party after a notice and cure period has expired. The parties are also permitted to terminate the Commercial Alliance Agreement if a change in circumstances that is not reasonably within the control of a party makes the anticipated financial return from the project inadequate or too uncertain. The parties have specific obligations to fulfill in the event of termination or if they file for bankruptcy protection.

**4. Investments**

Short-term investments consist of the following:

	<u>Amortized Cost</u>	<u>Unrealized Gain/(Loss)</u>	<u>Market Value</u>
<b>December 31, 2009</b>			
Treasuries	\$ 8,940	\$ (1)	\$ 8,939
Government-sponsored enterprises	72,426	23	72,449
Total	<u>\$ 81,366</u>	<u>\$ 22</u>	<u>\$ 81,388</u>
<b>December 31, 2008</b>			
Commercial paper	\$ 23,413	\$ 85	\$ 23,498
Treasuries	3,993	7	4,000
Government-sponsored enterprises	37,050	354	37,404
Total	<u>\$ 64,456</u>	<u>\$ 446</u>	<u>\$ 64,902</u>



**METABOLIX, INC.****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)****(In thousands, except for share and per share amounts)****4. Investments (Continued)**

As of December 31, 2009 and 2008 the contractual maturity of all investments was one year or less.

**5. Property and Equipment**

Property and equipment consisted of the following:

	Year ended December 31,	
	2009	2008
Equipment	\$ 4,619	\$ 3,504
Furniture and fixtures	244	223
Leasehold improvements	8,161	8,161
Software	251	163
Total property and equipment, at cost	13,275	12,051
Less: Accumulated depreciation	(9,762)	(7,663)
Property and equipment, net	<u>\$ 3,513</u>	<u>\$ 4,388</u>

Depreciation expense for the years ended December 31, 2009, 2008, and 2007 was \$ 2,734, \$3,731 and \$1,451 respectively. The Company had no capitalized leased equipment as of December 31, 2009 or 2008.

**6. Accrued Expenses**

Accrued expenses consist of the following:

	Year ended December 31,	
	2009	2008
Employee compensation and benefits	\$ 2,505	\$ 1,618
Pre-commercial manufacturing costs	279	350
Professional services	193	206
Contracted research and development	10	317
Other	759	1,096
Total accrued expenses	<u>\$ 3,746</u>	<u>\$ 3,587</u>

**7. Commitments and Contingencies****Leases**

The Company rents its facilities under operating leases, which expire through May 2014. Rental payments under operating leases for the years ended December 31, 2009, 2008 and 2007 were \$1,659, \$1,482 and \$1,152, respectively. The deferred rent liability recorded on the Company's balance sheet at December 31, 2009 and 2008 includes the unamortized balance of the landlord incentive payments and the cumulative difference between actual facility lease payments and lease expense recognized ratably

**METABOLIX, INC.****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)****(In thousands, except for share and per share amounts)****7. Commitments and Contingencies (Continued)**

over the operating lease period. At December 31, 2009, the Company's future minimum payments required under operating leases are as follows:

<u>Year ended December 31,</u>	<u>Minimum lease payment</u>
2010	\$ 1,218
2011	1,188
2012	1,074
2013	988
2014 and thereafter	329
Total	<u>\$ 4,797</u>

**License Agreement with Massachusetts Institute of Technology ("MIT")**

The Company's exclusive license agreement with MIT requires the Company to pay annual license fees of \$25 and additional royalty payments to MIT based on a percentage of sublicensing revenues or net sales of products or services covered by a patent that is subject to the license. There was \$2 accrued at December 31, 2009 and 2008, respectively, for such royalties.

**Joint Research Agreement with the Cooperative Research Centre for Sugar Industry Innovation through Biotechnology**

In 2007, the Company entered a joint research arrangement, known as the Cooperative Research Centre for Sugar Industry Innovation through Biotechnology, with the Commonwealth of Australia and various other parties for the purpose of developing and gaining access to certain intellectual property. The Commonwealth of Australia established the program to enhance the transfer of research outputs into commercial or other outcomes of economic, environmental or social benefit to Australia. The contract commenced on January 1, 2007 and the Company's funding obligation continues until July 1, 2010. In connection with this agreement the Company was obligated to provide funding in the form of cash in the amount of \$805 Australian dollars and in kind contribution in the amount of \$2,287 Australian dollars. As of December 31, 2009 the remaining cash portion and in kind portion of the Company's obligation, denominated in U.S. dollars, is \$103 and \$303, respectively. The in kind contribution consists of salaries and overhead attributable to research associated with the joint research agreement. The cash and in kind contributions are recorded as research and development expense as incurred, in the consolidated statement of operations.

**8. Related Party Transactions****Tepha, Inc.**

During 1999 and 2003, the Company entered into sublicense agreements with Tepha, Inc. ("Tepha"), to sublicense technology to Tepha. The president and chief executive officer of Tepha, who was also a director of Tepha, was a director of the Company at that time. In addition, the Company directors Messrs. Muller and Giles and Dr. Sinskey serve on the Board of Directors of Tepha. The agreements with Tepha contain provisions for sublicense maintenance fees to be paid to the Company

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**8. Related Party Transactions (Continued)**

upon Tephra achieving certain financing milestones and for product related milestones. Under the agreement, the Company also receives royalties on net sales of licensed products or sublicensing revenues received by Tephra, subject to a minimum payment each year.

The Company recognized license and royalty revenues of \$120, \$120 and \$157, from Tephra for the years ended December 31, 2009, 2008, and 2007, respectively. As of December 31, 2009 and 2008, the Company had no outstanding receivable due from Tephra.

**ADM**

The Company's collaborative partner ADM made a \$5,000 investment in the Company as part of the Series 05 redeemable convertible preferred stock issuance in January 2006. Concurrent with the Company's initial public offering, ADM purchased \$7,500 of the Company's shares in a private placement. ADM makes various payments to the Company under the collaborative agreement signed during July 2006. See Note 3 for further discussion regarding collaborative agreements with ADM. As of December 31, 2009, the Company had an outstanding balance receivable of \$365 from ADM which was recorded as due from related parties on the consolidated balance sheet. As of December 31, 2008 there were no significant amounts due from ADM.

**9. Redeemable Convertible Preferred Stock**

The Company's certificate of incorporation, as amended and restated, authorizes it to issue up to 5,000,000 shares of \$0.01 par value preferred stock. As of December 31, 2009 and 2008 no preferred stock was issued or outstanding.

**10. Common Stock**

**Common Stock Issuances**

During November 2009, the Company completed a public offering of 3,450,000 shares of its common stock at a price of \$9.00 per share. Net proceeds were \$29,118 after deducting underwriting discounts, commissions and offering costs of \$1,932. The Company intends to use the proceeds from the offering for working capital and other general corporate purposes.

**Warrants**

In connection with signing a lease agreement in 2004, the Company issued the landlord warrants to purchase 4,086 shares of common stock at an exercise price of \$3.30 per share. The warrants expire ten years from the lease term commencement date. The fair value of these warrants is immaterial. At December 31, 2009 these warrants were all outstanding and exercisable.

**11. Shareholder Rights Plan**

On July 7, 2009, the Company adopted a Shareholder Rights Plan, the purpose of which is, among other things, to enhance the Board's ability to protect shareholder interests and to ensure that shareholders receive fair treatment in the event any coercive takeover attempt of the Company is made in the future. The Shareholder Rights Plan could make it more difficult for a third party to acquire, or

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**11. Shareholder Rights Plan (Continued)**

could discourage a third party from acquiring, the Company or a large block of the Company's Common Stock.

In connection with the adoption of the Shareholder Rights Plan, the Board of Directors of the Company declared a dividend distribution of one preferred stock purchase right (a "Right") for each outstanding share of Common Stock to shareholders of record as of the close of business on July 8, 2009. The Rights currently are not exercisable and are attached to and trade with the outstanding shares of Common Stock. Under the Shareholder Rights Plan, the Rights become exercisable if a person becomes an "acquiring person" by acquiring 15% or more of the outstanding shares of Common Stock or if a person commences a tender offer that would result in that person owning 15% or more of the Common Stock. If a person becomes an "acquiring person," each holder of a Right (other than the acquiring person) would be entitled to purchase, at the then-current exercise price, such number of shares of the Company's preferred stock which are equivalent to shares of Common Stock having twice the exercise price of the Right. If the Company is acquired in a merger or other business combination transaction after any such event, each holder of a Right would then be entitled to purchase, at the then-current exercise price, shares of the acquiring company's common stock having a value of twice the exercise price of the Right.

**12. Stock-Based Compensation**

The Company adopted a stock plan in 1995, (the "1995 Plan") which provided for the granting of incentive stock options, nonqualified stock options, stock awards, and opportunities to make direct purchases of stock, to employees, officers, directors and consultants of the Company. In June 2005 the 1995 Plan was terminated and the Company adopted a new plan (the "2005 Plan"). No further grants or awards were subsequently made under the 1995 Plan. A total of 907,679 options were awarded from the 1995 Plan and as of December 31, 2009, 102,277 of these options remain outstanding and eligible for future exercise and continue to be governed by the terms of the 1995 Plan.

The 2005 Plan provided for the granting of incentive stock options, nonqualified stock options, stock awards, and opportunities to make direct purchases of stock, to employees, officers, directors and consultants of the Company. In November 2006 the 2005 Plan was terminated and the Company adopted a new plan (the "2006 Plan"). No further grants or awards were subsequently made under the 2005 Plan. A total of 1,619,134 options were awarded from the 2005 Plan and as of December 31, 2009, 541,430 of these options remain outstanding and eligible for future exercise and continue to be governed by the terms of the 2005 Plan.

The 2006 Plan provides for the granting of incentive stock options, nonqualified stock options, stock appreciation rights, deferred stock awards, restricted stock awards, unrestricted stock awards, cash-based awards and dividend equivalent rights. The 2006 Plan states that not more than 10,000,000 shares shall be issued under the plan. A total of 2,798,202 options have been awarded from the 2006 Plan and as of December 31, 2009, 2,495,122 of these options remain outstanding and eligible for future exercise.

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

(In thousands, except for share and per share amounts)

**12. Stock-Based Compensation (Continued)**

Options granted under the Plans generally vest ratably over four years from the date of hire for new employees, or date of award for existing employees, or date of commencement of services with the Company for nonemployees, and generally expire ten years from the date of issuance. A summary of the activity related to the shares of common stock covered by outstanding options follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic value
Balance at December 31, 2008	2,646,765	\$ 11.59		
Granted	596,385	8.19		
Exercised	(51,930)	2.23		
Cancelled	(52,391)	14.77		
Balance at December 31, 2009	<u>3,138,829</u>	11.04	7.03	\$ 7,626
Vested and expected to vest at December 31, 2009	3,047,147	11.07	6.98	7,467
Exercisable at December 31, 2009	1,814,205	11.20	6.08	5,404

The weighted average grant date fair value per share of options granted during fiscal years 2009, 2008, and 2007 was \$5.55, \$7.01 and \$14.08, respectively. The total intrinsic value of options exercised was \$422, \$3,428 and \$20,238 for the years ended December 31, 2009, 2008 and 2007 respectively.

A summary of information about the shares of common stock covered by outstanding and exercisable options under the option plans at December 31, 2009 follows:

Range of exercise prices	Stock Options Outstanding			Stock Options Exercisable	
	Number of shares	Weighted average remaining contractual life (in years)	Weighted average exercise price per share	Number of shares	Weighted average exercise price per share
\$1.65 - 5.13	635,535	5.24	\$ 2.93	607,052	\$ 2.85
5.14 - 8.69	469,354	9.29	7.26	62,662	7.32
8.70 - 11.02	577,015	8.84	9.86	142,140	9.71
11.03 - 12.84	377,334	8.23	11.64	196,535	11.82
12.85 - 15.00	626,904	4.88	14.29	456,661	14.18
15.01 - 24.97	452,687	6.83	22.87	349,155	22.77
1.65 - 24.97	<u>3,138,829</u>	7.03	11.04	<u>1,814,205</u>	11.20

**Expense Information for Employee Stock Option Awards**

The Company recognized stock-based compensation expense, related to employee stock option awards, of \$4,707, \$4,486 and \$4,054 for the years ended December 31, 2009, 2008 and 2007, respectively. At December 31, 2009, there was approximately \$8,060 of pre-tax stock-based

**METABOLIX, INC.****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)****(In thousands, except for share and per share amounts)****12. Stock-Based Compensation (Continued)**

compensation expense, net of estimated forfeitures, related to unvested awards not yet recognized which is expected to be recognized over a weighted average period of 2.34 years.

For the years ended December 31, 2009, 2008 and 2007, the Company determined the fair value of stock options using the Black-Scholes option pricing model with the following assumptions for option grants, respectively:

	Year Ended December 31,		
	2009	2008	2007
Expected dividend yield	—	—	—
Risk-free rate	1.67% - 2.58%	2.09% - 3.77%	3.51% - 4.82%
Expected option term (in years)	5.41 - 5.55	6.1	6.1
Volatility	81%	61% - 81%	59%

For the year ended December 31, 2009, expected volatility is estimated based on the Company's historical volatility blended with the historical volatilities of a peer group of similar public companies. Due to the Company's limited trading history management believes that this approach provides additional information about future stock price movements when compared to analyzing the historical volatility of the Company on its own.

The risk-free interest rate used for each grant is equal to the U.S. Treasury yield curve in effect at the time of grant for instruments with a term similar to the expected life of the related option.

For the year ended December 31, 2009, the expected term of the options is based upon evaluation of historical and expected future exercise behavior.

The stock price volatility and expected terms utilized in the calculation involve management's best estimates at that time, both of which impact the fair value of the option calculated under the Black-Scholes methodology and, ultimately, the expense that will be recognized over the life of the option. The accounting standard for stock-based compensation requires that the Company recognize compensation expense for only the portion of options that are expected to vest. Therefore, the Company has estimated expected forfeitures of stock options for the grants valued. In developing a forfeiture rate estimate, the Company considered its historical experience, its growing employee base and actual forfeitures for the year. The Company will continue to evaluate its forfeiture rate as compared to the actual number of forfeitures in future periods to determine if adjustments to compensation expense may be required.

**Expense Information for Non-employee Stock Option Awards**

There were no stock options granted to non-employee consultants during 2009. During the years ended December 2008, and 2007, the Company granted stock options to purchase 6,500, and 15,000 shares of common stock, respectively, to non-employee consultants. The compensation expense related to these options is to be recognized over a period of four years. The granted stock options vest quarterly and such vesting is contingent upon future services provided by the consultants to the Company. The Company recorded a benefit of \$54 and \$47 for the years ended December 31, 2009 and 2008, respectively. Consultant related stock-based compensation expense of \$505 was recorded during the year ended December 2007. Options remaining unvested for non-employees are subject to

**METABOLIX, INC.****NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)****(In thousands, except for share and per share amounts)****12. Stock-Based Compensation (Continued)**

remeasurement each reporting period prior to vesting in full. Since the fair market value of the options issued to non-employees is subject to change in the future, the compensation expense recognized in each year may not be indicative of future stock-based compensation charges. The Company's policy is to issue new shares upon the exercise of stock options.

The fair value of each option granted to non-employees was estimated using the Black-Scholes option pricing model with the following assumptions:

	Year Ended December 31,		
	2009	2008	2007
Expected dividend yield	—	—	—
Risk-free rate	2.71% - 3.85%	2.25% - 3.99%	4.04% - 5.03%
Expected option term (in years)	10	10	10
Volatility	81%	61% - 81%	59%

**13. Income Taxes**

There is no provision for income taxes because the Company has incurred operating losses since inception. The reported amount of income tax expense for the years differs from the amount that would result from applying domestic federal statutory tax rates to pretax losses primarily because of changes in valuation allowance. Significant components of the Company's net deferred tax asset at December 31, 2009, 2008 and 2007 are as follows:

	Year		
	2009	2008	2007
Net operating loss carryforward	\$ 32,896	\$ 17,712	\$ 12,924
Capitalization of research and development expenses	5,795	10,874	8,224
Credit carryforwards	5,624	4,266	3,260
Other temporary differences	23,713	20,690	14,758
Total deferred tax assets	68,028	53,542	39,166
Valuation Allowance	(68,028)	(53,542)	(39,166)
Net deferred tax asset	\$ —	\$ —	\$ —

The Company follows the accounting guidance related to income taxes including guidance, which addresses accounting for uncertainty in income taxes. This guidance prescribes a threshold for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. It also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosures and transitions. The Company has no amounts recorded for any unrecognized tax benefits as of December 31, 2009 or December 31, 2008.

The tax years 2006 through 2009 remain open to examination by major taxing jurisdictions to which the Company is subject, which are primarily in the U.S.

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**(In thousands, except for share and per share amounts)**

**13. Income Taxes (Continued)**

The Company's policy is to record estimated interest and penalties related to uncertain tax positions in income tax expense. As of December 31, 2009, and December 31, 2008, the Company had no accrued interest or penalties recorded related to uncertain tax positions.

At December 31, 2009 the Company had net operating loss carryforwards (NOLs) for federal and state income tax purposes of \$105,427 and \$75,080, respectively. Included in the federal and state net operating loss carryforwards is approximately \$18,935 of deduction related to the exercise of stock options subsequent to the adoption of amended accounting guidance related to stock-based compensation. This amount represents an excess tax benefit as defined under the amended accounting guidance related to stock-based compensation and has not been recorded as a deferred tax asset. The Company's existing federal and state net operating loss carryforwards begin to expire in 2010. The Company also had available research and development credits for federal and state income tax purposes of approximately \$3,947 and \$2,447 respectively. The federal and state research and development credits will begin to expire in 2014 and 2016, respectively. As of December 31, 2009 the Company also had available investment tax credits for state income tax purposes of \$92 which also begin to expire in 2010. Management of the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which are comprised principally of net operating loss carryforwards and research and development credits. Under the applicable accounting standards, management has considered the Company's history of losses and concluded that it is more likely than not that the Company will not recognize the benefits of federal and state deferred tax assets. Accordingly, a full valuation allowance has been established against the deferred tax assets.

Utilization of the net operating loss and research and development credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986 due to ownership change limitations that have occurred previously or that could occur in the future. These ownership changes may limit the amount of net operating loss and research and development credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively. The Company has not currently completed an evaluation of ownership changes through December 31, 2009 to assess whether utilization of the Company's NOL or R&D credit carryforwards would be subject to an annual limitation under Section 382. To the extent an ownership change occurs in the future, the net operating loss and credit carryforwards may be subject to limitation.

**14. Employee Benefits**

The Company maintains a 401(k) savings plan in which substantially all of its regular employees are eligible to participate. Participants may contribute up to 60% of their annual compensation to the plan, subject to eligibility requirements and annual IRS limitations. In 2007 the Company initiated a matching contribution in common stock of up to 4.5% of a participant's total compensation dependent upon the level of participant contributions made during the plan year. Pursuant to this plan, the Company issued 49,518 and 32,534 shares of common stock during the twelve months ended December 31, 2009 and 2008, respectively, and recorded \$428 and \$400, respectively, of related expense. Company contributions are fully vested upon issuance.



## METABOLIX, INC.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(In thousands, except for share and per share amounts)

**15. Fair Value Measurements**

Effective January 1, 2008, the Company adopted a standard for fair value measurements for its financial assets and liabilities that are re-measured and reported at fair value at each reporting period, and non-financial assets and liabilities that are re-measured and reported at fair value at least annually. The adoption of this guidance did not have an impact on the Company's consolidated financial position or results of operations.

The Company has certain financial assets recorded at fair value which have been classified as Level 1, 2 or 3 within the fair value hierarchy as described in the accounting standards for fair value measurements. Fair values determined by Level 1 inputs utilize observable data such as quoted prices in active markets. Fair values determined by Level 2 inputs utilize data points other than quoted prices in active markets that are observable either directly or indirectly. Fair values determined by Level 3 inputs utilize unobservable data points in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The tables below present information about the Company's assets that are measured at fair value on a recurring basis as of December 31, 2009 and 2008 and indicate the fair value hierarchy of the valuation techniques utilized to determine such fair value.

The Company's financial assets have been classified as Level 2. These assets have been initially valued at the transaction price and subsequently valued typically utilizing third party pricing services. Because the Company's investment portfolio may include securities that do not always trade on a daily basis, the pricing services use many observable market inputs to determine value including reportable trades, benchmark yields and benchmarking of like securities. The Company validates the prices provided by the third party pricing services by reviewing their pricing methods and obtaining market values from other pricing sources. After completing the validation procedures, the Company did not adjust or override any fair value measurements provided by these pricing services as of December 31, 2009 and 2008.

The following tables set forth the Company's financial assets that were recorded at fair value as of December 31, 2009 and 2008:

Description	Fair value measurements at reporting date using			Balance as of 12/31/09
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	
Cash equivalents:				
Money Market funds	\$ —	\$ 8,116	\$ —	\$ 8,116
Government-sponsored enterprises		1,490		1,490
Short-term investments:				
Treasuries		8,939		8,939
Government-sponsored enterprises	—	72,449	—	72,449
	<u>\$ —</u>	<u>\$ 90,994</u>	<u>\$ —</u>	<u>\$ 90,994</u>

**METABOLIX, INC.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

(In thousands, except for share and per share amounts)

**15. Fair Value Measurements (Continued)**

Description	Fair value measurements at reporting date using			Balance as of 12/31/08
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	
Cash equivalents:				
Money Market funds	\$ —	\$ 23,152	\$ —	\$ 23,152
Commercial paper	—	1,100	—	1,100
Short-term investments:				
Treasuries	—	4,000	—	4,000
Commercial paper	—	23,497	—	23,497
Government-sponsored enterprises	—	37,405	—	37,405
	<u>\$ —</u>	<u>\$ 89,154</u>	<u>\$ —</u>	<u>\$ 89,154</u>

**16. Summary of Quarterly Financial Data (unaudited)**

The following tables summarize the unaudited quarterly financial data for the last two fiscal years.

	Quarter ended			
	March 31,	June 30,	September 30,	December 31,
<b>2009</b>				
Total revenues	\$ 261	\$ 348	\$ 611	\$ 205
Loss from operations	(9,461)	(9,913)	(9,530)	(9,825)
Net loss	(9,109)	(9,672)	(9,417)	(9,759)
Basic and diluted net loss per share	(0.40)	(0.42)	(0.41)	(0.39)
<b>2008</b>				
Total revenues	\$ 404	\$ 401	\$ 351	\$ 399
Loss from operations	(9,627)	(9,655)	(10,268)	(9,342)
Net loss	(8,448)	(8,925)	(9,728)	(8,904)
Basic and diluted net loss per share	(0.37)	(0.39)	(0.42)	(0.40)



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**Exhibit 23.1**

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in the Registration Statements on Forms S-3 (No. 333-148758) and S-8 (Nos. 333-138631, 333-145232, 333-155115 and 333-157869) of Metabolix, Inc. of our report dated March 11, 2010 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K. We also consent to the reference to us under the heading "Selected Consolidated Financial Data" in this Form 10-K.

/s/ PricewaterhouseCoopers LLP  
Boston, Massachusetts  
March 11, 2010

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[Exhibit 23.1](#)

[CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM](#)

**CERTIFICATIONS**

I, Richard P. Eno certify that:

1. I have reviewed this annual report on Form 10-K of Metabolix, 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(s) 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) 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) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (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(s) 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 11, 2010

/s/ RICHARD P. ENO

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Name: Richard P. Eno  
Title: *President and Chief Executive Officer*  
*(Principal Executive Officer)*

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[EXHIBIT 31.1](#)

[CERTIFICATIONS](#)

**CERTIFICATIONS**

I, Joseph D. Hill certify that:

1. I have reviewed this annual report on Form 10-K of Metabolix, 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(s) 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) 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) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (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(s) 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 11, 2010

/s/ JOSEPH D. HILL

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Name: Joseph D. Hill  
Title: *Chief Financial Officer*  
*(Principal Financial and Accounting Officer)*

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[EXHIBIT 31.2](#)

[CERTIFICATIONS](#)

**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 on Form 10-K of Metabolix, Inc. (the "Company") for the year ended December 31, 2009 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Richard P. Eno, President, Chief Executive Officer and Principal Executive Officer of the Company and Joseph D. Hill, Chief Financial Officer and Principal Financial and Accounting Officer of the Company, certify, pursuant to 18 U.S.C. 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), as applicable, of the Securities Exchange Act of 1934, as amended, and
2. the information in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being provided pursuant to 18 U.S.C. 1350 and is not to be deemed a part of the Report, nor is it to be deemed to be "filed" for any purpose whatsoever.

METABOLIX, INC.

March 11, 2010

By: /s/ RICHARD P. ENO

\_\_\_\_\_  
Richard P. Eno  
*President and Chief Executive Officer*  
*(Principal Executive Officer)*

March 11, 2010

By: /s/ JOSEPH D. HILL

\_\_\_\_\_  
Joseph D. Hill  
*Chief Financial Officer*  
*(Principal Financial and Accounting Officer)*

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[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](#)