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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2011

Or

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

For the transition period from to

Commission file number: 001-14895

AVI BioPharma, Inc.

(Exact name of registrant as specified in its charter)

Oregon	**93-0797222**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
3450 Monte Villa Parkway, Suite 101 Bothell, Washington	**98021**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (425) 354-5038

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

Title of Each Class	Name of Exchange on Which Registered
Common Stock, $0.0001 par value	**The NASDAQ Stock Market LLC (The NASDAQ Global Market)**

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 (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

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 the Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2011 was approximately $192,635,782.

The number of outstanding shares of the registrant's common stock as of the close of business on February 29, 2012 was 135,743,120.

DOCUMENTS INCORPORATED BY REFERENCE

The issuer has incorporated into Part III of this Annual Report on Form 10-K, by reference, portions of its definitive Proxy Statement for its 2012 annual meeting.

AVI BioPharma, Inc.
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PART I

Item 1. Business.

Forward-Looking Information

This Annual Report on Form 10-K, including the "Management's Discussion and Analysis of Financial Condition and Results of Operation" section in Item 7, and other materials accompanying this Annual Report on Form 10-K contain forward-looking statements or incorporate by reference forward-looking statements. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements are identified by words such as "believe," "anticipate," "expect," "intend," "plan," "will," "may," and other similar expressions. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition, or state other "forward-looking" information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements. These forward-looking statements include, but are not limited to:

- *our expectations regarding the development and clinical benefits of our product candidates;*
- *the results of our research and development efforts and the efficacy of our PMO-based chemistries and other RNA-based technology;*
- *our expectations regarding our ability to become a leading developer and marketer of RNA-based therapeutics;*
- *our expectations regarding the results of preclinical and clinical testing of our product candidates;*
- *our ability to release results by the end of April 2012 from our Phase IIb clinical trial for eteplirsen and initiate a pivotal Phase III clinical trial for eteplirsen by the end of 2012;*
- *our ability to initiate Phase I multiple ascending dose studies for AVI-7288 and AVI-6002 in the second half of 2012;*
- *the receipt of any required approval from the U.S. Food and Drug Administration, or FDA, or other regulatory approval for our products;*
- *the effect of regulation by FDA and other agencies;*
- *our intention to introduce new products;*
- *our expectations regarding the markets for our products;*
- *acceptance of our products, if introduced, in the marketplace;*
- *the impact of competitive products, product development, commercialization and technological difficulties;*
- *our expectations regarding our ability to commercialize eteplirsen with a relatively small sales force, if eteplirsen is approved for commercial sale;*
- *our expectations regarding partnering opportunities and other strategic transactions;*
- *the extent of protection that our patents provide and our pending patent applications may provide, if patents issue from such applications, to our technologies and programs;*
- *our plans to file additional patent applications to enhance and protect our existing intellectual property portfolio;*
- *our ability to invalidate some or all of the claims covered by patents issued to competitors;*
- *our estimates regarding our future revenues, research and development expenses, other expenses, payments to third parties and changes in staffing levels;*
- *our estimate regarding how long our existing cash and cash equivalents, exclusive of receipt of future proceeds pursuant to our contracts with the U.S. government, will be sufficient to finance our operations;*
- *our expectations about funding from the government and other sources; and*

- *the adequacy of funds to support our future operations and our future capital needs.*

All forward-looking statements are based on information available to us on the date of this Annual Report on Form 10-K and we will not update any of the forward-looking statements after the date of this Annual Report on Form 10-K, except as required by law. Our actual results could differ materially from those discussed in this Annual Report on Form 10-K. The forward-looking statements contained in this Annual Report on Form 10-K, and other written and oral forward-looking statements made by us from time to time, are subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in the following discussion and within Part I, Item 1A "Risk Factors" of this Annual Report on Form 10-K.

Overview

We are a biopharmaceutical company focused on the discovery and development of unique RNA-based therapeutics for the treatment of rare and infectious diseases. Applying our proprietary, highly-differentiated and innovative platform technologies, we are able to target a broad range of diseases and disorders through distinct RNA-based mechanisms of action. We are primarily focused on rapidly advancing the development of our potentially disease-modifying Duchenne muscular dystrophy drug candidates, including our lead product candidate, eteplirsen, which is currently in a Phase IIb trial. We are also focused on developing therapeutics for the treatment of infectious diseases, including our lead infectious disease programs aimed at the development of drug candidates for the Ebola and Marburg hemorrhagic fever viruses. By building our infectious disease programs funded by the U.S. government and leveraging our highly-differentiated, proprietary technology platforms, we are seeking to further develop our research and development competencies and identify additional product candidates.

Our highly-differentiated RNA-based technologies work at the most fundamental level of biology and potentially could have a meaningful impact across a broad range of human diseases and disorders. Our lead program focuses on the development of disease-modifying therapeutic candidates for Duchenne muscular dystrophy, or DMD, a rare genetic muscle-wasting disease caused by the absence of dystrophin, a protein necessary for muscle function. Currently, there are no disease-modifying therapies available for DMD. Eteplirsen is our lead therapeutic candidate for DMD. If we are successful in our development efforts, eteplirsen will address a severe unmet medical need. Data from 17 of the 19 individuals enrolled in our Phase Ib/IIa trial in the United Kingdom who were treated systemically with eteplirsen demonstrated some generation of novel dystrophin, and one participant exhibited the first ever reported increase in dystrophin positive muscle fibers to 55% of normal. Restoration of dystrophin expression and dystrophin positive fibers is believed to be critical for successful disease-modifying treatment of individuals with DMD. We initiated a Phase IIb trial for eteplirsen in August 2011 with an objective of initiating a pivotal trial by the end of 2012. We anticipate releasing results from our current Phase IIb trial by the end of April 2012.

We are also leveraging the capabilities of our RNA-based technology platforms to develop therapeutics for the treatment of infectious diseases. The U.S. Department of Defense, or DoD, has provided significant financial support for the development of therapeutics against Ebola, Marburg, Dengue and influenza viruses. In 2010, we were awarded contracts totaling more than $300 million for the research of select therapeutic candidates. We have attracted DoD's support based in part on our ability to rapidly respond to pathogenic threats by quickly identifying, manufacturing and evaluating novel therapeutic candidates, as discussed in greater detail in the section captioned "—Development Programs—Anti-Viral Programs—Influenza Program" below.

The basis for our novel RNA-based therapeutics is our phosphorodiamidate-linked morpholino oligomer, or PMO, chemistries. Unlike other RNA-based therapeutics, which are often used to down-regulate gene expression, our technologies can be used to selectively up-regulate or down-regulate the production of a target protein, or direct the expression of novel proteins involved in human diseases and disorders. Further, we believe the charge-neutral nature of our PMO-based molecules may have the potential to reduce off-target effects, such

as immune stimulatory effects often seen in alternative RNA-based technologies. We believe that our highly-differentiated, proprietary and innovative RNA-based technology platforms, based on charge neutral morpholino oligomers, may represent a significant improvement over traditional RNA-based technologies.

We were incorporated in the State of Oregon on July 22, 1980. Our executive office is located at 3450 Monte Villa Parkway, Suite 101, Bothell, Washington 98021 and our telephone number is (425) 354-5038. Our common stock trades on The NASDAQ Global Market under the symbol "AVII."

This Annual Report on Form 10-K includes our trademarks and registered trademarks, including PMO *plus*®, PMO-X™, AVI BioPharma®, Cytoporter® and NeuGene®. Each other trademark, trade name or service mark appearing in this Annual Report on Form 10-K belongs to its holder.

Where You Can Find Additional Information

We make available free of charge through our investor relations website, www.avibio.com, our annual reports, quarterly reports, current reports, proxy statements and all amendments to those reports as soon as reasonably practicable after such material is electronically filed or furnished with the SEC. These reports may also be obtained without charge by contacting Investor Relations, AVI BioPharma, Inc., 3450 Monte Villa Parkway, Suite 101, Bothell, Washington 98021, e-mail: investorrelations@avibio.com. Our Internet website and the information contained therein or incorporated therein are not intended to be incorporated into this Annual Report on Form 10-K. In addition, the public may read and copy any materials we file or furnish with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549 or may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. Moreover, the SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding reports that we file or furnish electronically with them at www.sec.gov.

Objectives and Business Strategy

We believe that our highly-differentiated RNA-based technology platforms can be used to develop novel pharmaceutical products to treat a broad range of diseases and address key unmet medical needs. We intend to leverage our RNA-based technology platforms, organizational capabilities and resources to become a leading developer and marketer of RNA-based therapeutics, including for the treatment of rare and infectious diseases, with a diversified portfolio of product candidates and approved products. In pursuit of this objective, we intend to engage in the following activities:

- advancing the development of eteplirsen and our other drug candidates for the treatment of DMD to realize the product opportunities of such candidates and provide significant clinical benefits;
- successfully executing our government funded infectious disease therapeutic programs and building on and leveraging our experience with such programs to further develop our research and development capabilities and garner additional external funding; and
- leveraging our highly-differentiated, proprietary RNA-based technology platforms to identify additional product candidates and explore various strategic opportunities, including potential partnering, licensing or collaboration arrangements with industry partners.

Development Programs

Our RNA-based drug programs are being clinically evaluated for the treatment of DMD and have also demonstrated promising anti-viral activity in infectious diseases such as Ebola, Marburg and H1N1 influenza in certain animal models. Our lead product candidates are at various stages of development summarized below.

Program	Indication	Mechanism	Chemistry	Development Stage	Developer / Collaborator
Eteplirsen	DMD (exon 51)	Exon Skipping	PMO	Phase IIb	Proprietary
AVI-6002	Ebola virus	Translation Suppression	PMO*plus*®	Phase I	Proprietary/ U.S. Government
AVI-6003*	Marburg virus	Translation Suppression	PMO*plus*®	Phase I	Proprietary/ U.S. Government
AVI-7100	H1N1 influenza virus	Translation Suppression	PMO*plus*®	Phase I	Proprietary/ U.S. Government

* As announced in February 2012, we intend to pursue development of AVI-7288, one of the two component oligomers in AVI-6003.

In the table above, under the heading "Development Stage," "Phase IIb" indicates clinical safety and efficacy testing in a small patient population, and "Phase I" indicates initial clinical safety testing in healthy volunteers or a limited patient population, or trials directed toward understanding the mechanisms or metabolism of the drug. For purposes of the table, "Development Stage" indicates the most advanced stage of development that has been completed or is ongoing.

Duchenne Muscular Dystrophy Program

Duchenne muscular dystrophy, or DMD, is one of the most common fatal genetic disorders affecting children (primarily boys) around the world. DMD is a devastating and incurable muscle-wasting disease associated with specific mutations in the gene that codes for dystrophin, a protein that plays a key structural role in muscle fiber function. The absence of dystrophin in muscle cells leads to significant cell damage and ultimately causes muscle cell death and fibrotic replacement. The disease occurs in approximately one in every 3,500 male births worldwide. Females are rarely affected by the disorder. Initial symptoms, which usually appear between the ages of three and five, include progressive muscle weakness of the legs and pelvis, manifested as difficulty walking, running or climbing stairs, which eventually spreads to the arms, neck, and other areas. By age ten, braces may be required for walking, and many individuals require full-time use of a wheelchair before age 12. Eventually muscular degeneration progresses to the point of complete paralysis. Disease progression is also typically associated with respiratory muscle dysfunction and a corresponding difficulty in breathing, which may require ventilatory support, and cardiac muscle dysfunction which may lead to heart failure. DMD is ultimately fatal and death usually occurs before the age of 30. There is currently no disease modifying treatment or cure for DMD.

The yearly cost of care for individuals with DMD is high and increases with disease progression. Although DMD is a rare disease, it represents a substantial product opportunity due to the severity and inexorable progression of the symptoms.

Our lead program is designed to address specific gene mutations that result in DMD by forcing the genetic machinery to skip over an adjacent contiguous piece (i.e., one or more exons) of RNA and, thus, restore the ability of the cell to express a new, truncated but functional, dystrophin protein. We believe that the expression of this truncated dystrophin protein may restore, prevent or slow deterioration of muscle function, as exemplified by the less severe muscular dystrophy phenotype, called Becker muscular dystrophy.

Eteplirsen. Eteplirsen is an antisense PMO-based therapeutic in clinical development for the treatment of individuals with DMD who have an error in the gene coding for dystrophin that can be treated by skipping exon 51. Eteplirsen targets the most frequent series of mutations that cause DMD. Eteplirsen has been granted orphan drug designation in the United States and European Union. See "—Government Regulation—Orphan Drug Designation and Exclusivity" for additional information.

In October 2010, we announced results from the most recently completed clinical trial of eteplirsen, AVI Study 28. Data from this study were published in *The Lancet* in July 2011. AVI Study 28 was a Phase Ib/IIa open label, dose-ranging, clinical trial assessing the safety, tolerability, pharmacokinetics and exploratory efficacy of eteplirsen in ambulatory individuals with DMD. Participants in AVI Study 28 were between the ages of five and 15 with errors in the gene coding for dystrophin, which were amenable to treatment by skipping exon 51. Participants were dosed once per week for 12 weeks. A total of 19 participants were enrolled and these individuals were assigned to one of six dose cohorts of 0.5, 1.0, 2.0, 4.0, 10.0 or 20.0 mg/kg. Of the 19 participants enrolled, 18 received at least ten of the 12 doses planned in this trial. After completion of dosing, participants were followed for an additional 14 weeks. Muscle biopsies were taken before treatment and 17 participants had a second biopsy at week 14, two weeks after administration of the final dose. The primary objective of the trial was to assess the safety of eteplirsen at these doses over the 26-week duration of the trial. Secondary trial objectives included assessment of plasma pharmacokinetics, urinary elimination and exploratory endpoints evaluating biological activity and clinical performance. This trial was conducted by investigators in the United Kingdom at the University College London Institute of Child Health / Great Ormond Street Hospital in London and at the Royal Victoria Infirmary in Newcastle-Upon-Tyne. Based on the AVI Study 28 results, we determined that:

- eteplirsen was well-tolerated in all participants;
- no drug-related serious adverse events or severe adverse events were detected, except that one participant exhibited deteriorating cardiac function, which was considered probably disease related;
- overall, adverse events were characteristic of the pediatric patient population and the underlying disease, with headache, upper-respiratory tract infection, back pain, rhinitis and myalgia being the most common. These adverse events were mostly mild or moderate in intensity, not dose-related, and none were considered probably or definitely related to eteplirsen;
- eteplirsen induced exon 51-skipping in all cohorts and new dystrophin protein expression in a significant, dose dependent (p=0.0203), but variable, manner in participants from cohort 3 (dose of 2.0 mg/kg) onwards;
- seven participants responded to treatment, in whom mean dystrophin fluorescence intensity increased from 8.9% to 16.4% of normal control after treatment (p=0·0287);
- the three participants with the greatest biochemical responses to treatment had 21%, 15%, and 55% dystrophin-positive fibers after treatment and these findings were confirmed with western blot, which showed an increase after treatment of protein levels from 2% to 18%, from 0.9% to 17%, and from 0% to 7.7% of normal muscle, respectively;
- new dystrophin expression was correctly localized in the membrane of muscle cells and was accompanied by restoration of the dystrophin-associated glycoprotein complex, or DGC, a protein complex, and neuronal nitrous oxide synthetase, or nNOS, both necessary for the proper function of muscle cells;
- reductions in key inflammatory markers, including reduced presence of inflammatory cells found in tissues, potentially suggest a favorable alteration in the underlying degenerative disease process;
- no immune response to newly made dystrophin was detected; and
- there was general stability in exploratory markers of participant clinical performance, including cardiac, pulmonary and muscle functional assessments.

We initiated a Phase IIb trial for eteplirsen in August 2011, AVI 4658-us-201, or Study 201, at Nationwide Children's Hospital in Columbus, Ohio. This is a randomized, double-blind, placebo-controlled study to assess the efficacy, safety, tolerability and pharmacokinetics of eteplirsen administered intravenously in two different doses over 24 weeks for the treatment of ambulant boys with DMD. Exploratory clinical measures of ambulation, muscle function and strength will also be captured and evaluated during the course of the trial. Study 201 is fully enrolled with 12 participants and muscle biopsies of all participants were performed prior to initiation of treatment. The 12 participants with a genotypically-confirmed appropriate genetic mutation were randomized into one of three treatment groups with four participants in each group. The first treatment group received a weekly intravenous administration of eteplirsen at a dose of 50.0 mg/kg. The second treatment group received a weekly intravenous administration of eteplirsen at a dose of 30.0 mg/kg. The third and final treatment group received a weekly administration of placebo. Participants receiving the 50.0 mg/kg dose received a second biopsy at 12 weeks after initiation of treatment, and participants receiving the 30.0 mg/kg dose received a second biopsy at 24 weeks after initiation of treatment. We anticipate releasing results from this trial by the end of April 2012 and intend to initiate a pivotal trial by the end of 2012.

All participants were enrolled in an open-label extension study (AVI 4658-us-202) following the completion of Study 201 and all participants, including those from the placebo group in Study 201, will receive either 30.0 mg/kg or 50.0 mg/kg for the duration of the extension study. Clinical efficacy measures similar to what was obtained in Study 201 will be collected.

Pan-Exon Strategy. In addition to our lead product candidate, eteplirsen, we are actively pursuing development of a product candidate that skips exon 45 through an IND-enabling collaboration. We are also finalizing the terms of a second IND-enabling collaboration for the development of a product candidate that skips exon 50. The active and proposed collaborations and our eteplirsen program are part of our larger pan-exon strategy for the development of drug candidates to address the most prevalent exon deletions in the DMD population. Because the majority of DMD patients have exon deletions that cluster together, a small number of exon-skipping therapies will potentially be disease-modifying for a relatively large percentage of DMD patients. Approximately 83% of the total DMD population is potentially treatable with exon-skipping therapeutics. Of this 83%, exon 51 skipping is applicable to the largest sub-group, equal to approximately 16%, and skipping of exons 50 and 45 is applicable to approximately 5% and 10%, respectively.

Anti-Viral Programs

We are implementing our RNA-based technology platforms in our anti-viral programs for the development of therapeutics to treat viruses, such as Ebola, Marburg and influenza. Our arrangement with DoD supporting the development of our Ebola and Marburg virus drug candidates provides funding for all clinical and licensure activities necessary to obtain approval of a New Drug Application, or NDA, by the U.S. Food and Drug Administration, or FDA, if DoD exercises all of its options under the arrangement. Under a prior arrangement, DoD similarly provided funding to advance the development of our H1N1 influenza drug candidate through an Investigational New Drug, or IND, application with the FDA and to preclinically evaluate its therapeutic potential against H5N1 (avian flu), Tamiflu® resistant H1N1 (pandemic flu) and H3N2 (seasonal flu). Without continued government support of these programs we may be unable to continue our development efforts. Future funding is subject to availability of budgeted funds from DoD or potentially the Department of Health and Human Services, or DHHS. For example, the period of performance for our June 2010 H1N1 influenza contract expired in June 2011 and our subsequent submissions to a DoD request for proposal, or RFP, for funding of the full clinical development of our influenza drug candidate, AVI-7100, were unsuccessful. Currently, we have paused our clinical development efforts on AVI-7100 and are exploring funding opportunities or partnerships with DHHS and industry collaborators to advance its development.

In the periods presented, substantially all of our revenues were derived from research and development contracts with and grants from the U.S. government. As of December 31, 2011, we had substantially completed

all of our contracts with the U.S. government except for the July 2010 agreement for the development of therapeutics against Ebola and Marburg. Pursuant to this agreement, as of December 31, 2011, we are currently entitled to receive up to $126.5 million of which $52.7 million has been recognized as revenue. In addition, if the U.S. government elects to exercise all its options under the agreement, an additional $161.5 million in funding is available. For a more detailed description of our contracts with the U.S. government, see "Management's Discussion and Analysis of Financial Condition and Results of Operation—U.S. Government Contracts" below and "Note 7—U.S. Government Contracts" of the financial statements included elsewhere in this Annual Report on Form 10-K.

Hemorrhagic Fever Virus Programs. Our anti-viral therapeutic programs use our translation suppression technology and apply our proprietary PMO*plus*® chemistry backbone, an advanced generation of our base PMO chemistry backbone that selectively introduces positive backbone charges to improve selective interaction between the drug and its target. Our translation suppressing technology is based on Translation Suppressing Oligomers, or TSOs, which are PMO-based compounds that stop or suppress the translation of a specific protein by binding to their specific target sequence in mRNA. We are pursuing development and regulatory approval of our Ebola and Marburg hemorrhagic fever virus product candidates under the FDA's "Animal Rule." The Animal Rule provides that under certain circumstances, where it is unethical or not feasible to conduct human efficacy studies, the FDA may grant marketing approval based on adequate and well-controlled animal studies when the results of those studies establish that the drug or biological product is reasonably likely to produce clinical benefit in humans. Demonstration of the product's safety in humans is still required. See "—Government Regulation —Animal Rule" for additional information. Our lead product candidate against the Ebola virus infection is AVI-6002. For Marburg virus infection, our lead product candidate has been AVI-6003. In February 2012, we announced that we received approval from the FDA to remove one of the two oligomers composing AVI-6003 and proceed with a single oligomer approach, AVI-7288, given that efficacy in non-human primates has been demonstrated to be attributable to this single oligomer. We are exploring the feasibility of alternate routes of administration of our Ebola and Marburg drug candidates, and at DoD's invitation, we are developing a proposal to be submitted for a study to demonstrate feasibility of the intramuscular route.

Ebola virus. AVI-6002, which is a combination of AVI-7537 and AVI-7539, is designed for post-exposure prophylaxis after documented or suspected exposure to the Ebola virus. The hemorrhagic fever caused by the Ebola virus is severe and often fatal in humans. The disease was first recognized in 1976 and is one of two members of a family of RNA viruses called Filoviridae. The disease is generally understood to be endemic to parts of Africa. The Ebola virus is classified as a Category A bioterrorism agent by the Centers for Disease Control and Prevention, or CDC, and was determined to be a material threat to national security by the Secretary of Homeland Security in 2006. Onset of illness from Ebola virus is abrupt and symptoms include fever, headache, muscle ache, vomiting and stomach pain. Internal and external bleeding may also be observed in some individuals. There are currently no treatments for Ebola virus infection beyond supportive care and the mortality rate is very high. We are currently evaluating the feasibility of developing AVI-7537 as a single agent for the post-exposure prophylaxis after documented or suspected exposure to Ebola virus.

Marburg virus. AVI-6003, which is a combination of AVI-7287 and AVI-7288, is designed for post-exposure prophylaxis after documented or suspected exposure to Marburg virus. Marburg hemorrhagic fever is another severe and often fatal disease in humans that was first recognized in 1967. It is also caused by an RNA virus of the Filoviridae family and is understood to be endemic to Africa. The Marburg virus is classified as a Category A bioterrorism agent by the CDC and was determined to be a material threat to national security by the Secretary of Homeland Security in 2006. Onset of the disease is often sudden and the symptoms include fever, chills, nausea, vomiting, chest pain and diarrhea. Increasingly severe symptoms may also include massive hemorrhaging and multiple organ dysfunction. There are currently no treatments for Marburg virus infection beyond supportive care and the mortality rate is even higher than that of Ebola infection. In February 2012, we announced that we received approval from the FDA to proceed with AVI-7288 as a single agent against Marburg virus infection. Studies conducted to date have shown that efficacy in non-human primates could be attributed to

AVI-7288, while AVI-7287 did not appear to contribute to efficacy. We intend to proceed with dosing AVI-7288 in the Phase I multiple ascending dose studies described below and in non-human primate studies to continue to evaluate efficacy.

Primates infected with Ebola virus and treated with AVI-6002 achieved 80% survival and primates infected with Marburg virus and treated with AVI-6003 achieved 100% survival, compared to universal lethality in both control groups. In addition to survival, primates treated with AVI-6002 and AVI-6003 demonstrated decreases in levels of viremia, in harmful inflammatory indicators and in virus induced liver damage. Additional data have also demonstrated that the surviving animals were resistant to viral infection after subsequent injection with the virus. Further studies are planned to evaluate the rapidity of onset of disease to determine the window of opportunity for effective therapy post-viral exposure.

In February 2012, we announced positive safety results from all six cohorts of our Phase I single ascending dose trials of AVI-6002 and AVI-6003. For each group, safety, clinical laboratory and renal biomarker results through five days after treatment were reviewed by an independent Data and Safety Monitoring Board, or DSMB, which issued recommendations for both studies to progress as planned to multiple ascending dose studies after no safety concerns were identified. The Phase I single ascending dose trials were designed to characterize the safety, tolerability and pharmacokinetics of each therapeutic candidate in healthy adult volunteers. In the two studies, a total of 60 healthy human subjects (five per group) were enrolled into six sequential dose groups (0.01, 0.1, 1.0, 3.0, 6.0 or 9.0 mg/kg). Within each group, four subjects received the indicated dose of the therapeutic and one subject received placebo. Final, unblinded safety and pharmacokinetic results for all subjects will be available upon full completion of the analyses. We anticipate initiating the Phase I multiple ascending dose studies in the second half of 2012, which are planned to characterize the safety, tolerability and pharmacokinetics of multiple doses of AVI-6002 and AVI-7288 in healthy adult volunteers. The randomized, double-blind placebo controlled studies will be overseen by the DSMB, who will review safety and clinical laboratory data after each dose cohort prior to enrolling the next higher dose cohort.

Influenza Program.

Our anti-viral therapeutic programs are also focused on the development of our product candidates designed to treat pandemic influenza viruses. AVI-7100 is our lead product candidate for the treatment of influenza and employs our PMO *plus*® technology. In June 2010, we were awarded a contract under DoD's Transformational Medical Technologies, or TMT, program, which funded our activities to develop AVI-7100 as a medical countermeasure against the pandemic H1N1 influenza virus. The period of performance for this contract ended in June 2011. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—U.S. Government Contracts" for additional information.

Symptoms of H1N1 influenza include fever, cough, runny nose, headache, chills and fatigue. Many people infected with H1N1 also have respiratory symptoms without a fever. Severe illness and deaths have also occurred. The CDC estimated that between April 2009 and April 2010 there were up to 89 million cases of H1N1 infection in the United States. The CDC also estimated that there were up to 403,000 H1N1-related hospitalizations in the U.S. during the same time period.

The TMT program established a contract with us to conduct a rapid response exercise against a real-world emerging threat like the pandemic H1N1 virus. The intent of the exercise was to demonstrate our capability to efficiently respond to a real-world emerging viral threat by rapidly designing and producing multiple therapeutic candidates and evaluating preclinical efficacy. Initially the exercise involved identifying target sequences against H1N1, designing several drug candidates utilizing proprietary derivatives of our PMO chemistry, and then manufacturing the candidates in sufficient quantity for limited preclinical testing. We successfully accomplished these steps in approximately one week, demonstrating our ability to rapidly respond to a real-world viral threat utilizing our RNA-based technology platforms.

Subsequently, we evaluated the preclinical activity of AVI-7100 and found that it showed a favorable safety profile in ferrets, rats and monkeys. In separate ferret studies, AVI-7100 demonstrated activity as a potentiator of Tamiflu and activity towards preventing transmission of Tamiflu-resistant H1N1.

In June 2011, we initiated dosing of AVI-7100 via intravenous infusion in single-ascending doses in up to 48 healthy adult volunteers. The first dose cohort in this Phase I, randomized, double-blind, placebo-controlled study was completed and received a favorable review from the DSMB to proceed to the next dose escalation. Currently, we have paused our clinical development efforts on AVI-7100 and are exploring funding opportunities or partnerships to advance its development.

Discovery Stage Program Overview

Our PMO-chemistries are highly-differentiated from other RNA technologies, including antisense, siRNA and RNAi. Unlike these technologies, which are often used for down-regulation of gene expression, ours can be used to selectively up-regulate or down-regulate the expression of proteins involved in human diseases and disorders, or direct the production of novel proteins with clinically relevant properties.

In addition to our pan-exon strategy for DMD, our preclinical research efforts are focused on the creation of product candidates for the treatment of other neuromuscular, infectious and rare diseases.

AVI Chemistry Technology

Our core chemistry is based on phosphorodiamidate-linked morpholino oligomers, or PMOs. PMOs are synthetic molecules based on a fundamental redesign of the natural nucleic acid structure of DNA and RNA. PMOs bind to complementary sequences of RNA by standard Watson-Crick nucleic acid base-pairing and control gene expression by steric blockade of targeted RNA. Structurally, the key difference between PMOs and naturally occurring DNA and RNA is that while PMOs, like DNA and RNA, have nucleic acid bases, those bases are bound to synthetic morpholine rings instead of deoxyribose (in DNA) or ribose (in RNA) rings, and they are linked through phosphorodiamidate groups instead of phosphate groups. Replacement of anionic phosphates with the charge-neutral phosphorodiamidate groups eliminates ionization in the usual physiological pH range, thus PMOs in organisms or cells are uncharged molecules. Because of these modifications, PMOs are especially resistant to degradation by plasma and intracellular enzymes. Unlike some other RNA-based technologies, including siRNAs and other types of antisense, PMOs rely on steric blocking rather than cellular enzymatic activity for their biological effects. In this way, PMOs operate fundamentally differently from other well-known RNA-based technologies.

We have developed three new PMO-based chemistry platforms in addition to our original PMO-based technology. We believe that the novel, favorable characteristics intrinsic in these new platforms will allow for the development of drug candidates with superior delivery specificity, therapeutic windows and drug-like properties.

PPMO. The first of these novel chemistries is based on peptide conjugated PMOs, or PPMOs, in which cellular uptake of the PMO component, as well as its potency and specificity of tissue targeting, may be significantly enhanced.

PMOplus®. The second of these chemistries, PMO*plus®*, includes the addition of selectively introduced positive charges to the PMO backbone. We believe that while PMO*plus®* has potentially broad therapeutic applications, it has thus far shown to be particularly effective in increasing the potency of PMO-based oligomers.

PMO-X™. The third of these chemistries, PMO-X™, involves novel, selective, and proprietary backbone chemistry modifications. We believe PMO-X™ may provide enhanced in vivo potency for our drug candidates, as well as greater flexibility in modulation of their tissue targeting, cellular delivery and uptake.

We intend to continue to support our internal research and development efforts in order to advance our proprietary chemistries and to develop new analogues that may provide additional benefits in key characteristics of drug performance.

AVI Mechanisms

Humans have far fewer genes than the number of unique proteins expressed in the human proteome. The genetic information stored in human DNA is not contiguous. Short DNA stretches, called exons that code for fragments of the protein are separated by long non-coding pieces of DNA called introns. During processing of precursor or pre-mRNA, which is copied from the DNA template, introns are removed and exons spliced together to create the mature mRNA, from which a functional protein can be made. Pre-mRNA copied from a gene can be spliced through alternative paths, such that different exons are combined, creating multiple mRNAs and, hence, generate multiple proteins from a single gene.

Our PMO-based molecules are designed to sterically block the access of cellular machinery to pre-mRNA and mRNA without degrading the RNA. Through this selective targeting, two distinct biologic mechanisms of action can be initiated: (1) modulation of pre-mRNA splicing (also commonly described as splice switching, exon skipping or directed alternative splicing) and (2) inhibition of mRNA translation (also commonly described as translation suppression). Through these mechanisms, steric-blocking oligonucleotides can repair defective RNA, up or down-regulate the production of selected proteins, or produce novel or remodeled proteins.

Material Agreements and Strategic Alliances

We believe that our RNA-based technology could be broadly applicable for the potential development of pharmaceutical products in many therapeutic areas. To further exploit our core technology, we have and may continue to enter into research, development or commercialization alliances with universities, hospitals, independent research centers, non-profit organizations and pharmaceutical and biotechnology companies for specific molecular targets or selected disease indications. We may also selectively pursue opportunities to access certain intellectual property rights that complement our internal portfolio through license agreements or other arrangements.

U.S. Department of Defense Agreements

We currently have contracts with the U.S. Department of Defense, or DoD, and its agencies funding our programs. For a more detailed description of our contracts with the U.S. government, see “Management’s Discussion and Analysis of Financial Condition and Results of Operation—U.S. Government Contracts” below and “Note 7—U.S. Government Contracts” of the financial statements included elsewhere in this Annual Report on Form 10-K.

University of Western Australia

In November 2008, we entered into an exclusive license with the University of Western Australia, or UWA, for certain patents and technical information relating to the use of certain antisense sequences for the treatment of DMD. The license grants us specific rights to the treatment of DMD by inducing the skipping of certain exons. Unless earlier terminated in accordance with the terms of the agreement, such agreement will expire on the expiration date of the last to expire patent within the patents licensed to us under the agreement. Our clinical candidate, eteplirsen, falls under the scope of this agreement. Any future drug candidates developed for the treatment of DMD by exon skipping may or may not fall under the scope of this agreement.

Under the agreement, we are required to meet certain performance diligence obligations related to development and commercialization of products developed under license. We believe we are currently in compliance with these obligations. We made an initial upfront payment to UWA on execution of the license. We

may be required to make additional payments to UWA of up to $150,000 based on successful achievement of certain regulatory-related milestones and also may be required to pay royalties ranging from a fraction of a percent to the low single digits on net sales of products covered by issued patents licensed from UWA during the term of the agreement. As of December 31, 2011, we have made milestone payments to UWA totaling $10,000, but have not made, and are not under any current obligation to make, any royalty payments to UWA until a product candidate is approved for commercial sale. We believe, however, that a milestone payment obligation of $15,000 to UWA may be triggered in 2012 upon initiation of our Phase III pivotal trial for eteplirsen.

Strategic Alliances

Isis—Ercole Agreement

In May 2003, Ercole Biotechnology, Inc., or Ercole, and Isis Pharmaceuticals, or Isis, entered into a collaboration and license agreement related to RNA splicing. In March 2008, we acquired all of the stock of Ercole in exchange for 5,811,721 shares of our common stock, which was valued at approximately $8.4 million, and the assumption of approximately $1.8 million in liabilities of Ercole. We also issued warrants to purchase our common stock (also classified as equity), which were valued at $437,000, in exchange for certain outstanding warrants issued by Ercole. In connection with the March 2008 acquisition, we assumed Ercole's obligations under the Isis agreement. This agreement contains several cross-licenses between the parties granting each party certain exclusive and nonexclusive rights under a selected set of the other parties' patents and patent applications for the research, development, and commercialization of antisense therapeutics using RNA splicing with respect to certain gene targets.

Subject to the satisfaction of certain milestones triggering the obligation to make any such payments, we may be obligated to make milestone payments to Isis of up to $23.4 million in the aggregate for each product developed under a licensed patent under this agreement.

As of December 31, 2011, we have not made, and are not under any current obligation to make, any such milestone payments, as the conditions triggering any such milestone payment obligations have not been satisfied. The range of percentage royalty payments required to be made by us under the terms of this agreement is from a fraction of a percent to mid single digits. We believe that our DMD, Ebola, Marburg and influenza programs will not fall under the scope of this agreement and therefore will not be subject to milestone or royalty obligations under its provisions.

Subject to the satisfaction of certain milestones triggering the obligation to make any such payments, Isis may be obligated to make milestone payments to us of up to $21.1 million in the aggregate for each product developed under a licensed patent under this agreement. As of December 31, 2011, Isis has not made, and is not under any current obligation to make, any such milestone payments, as the conditions triggering any such milestone payment obligations have not been satisfied. The percentage royalty payments required to be made by Isis under the terms of this agreement is a fraction of a percent. As to any product commercialized under the agreement, the agreement will terminate on the expiration date of the last to expire licensed patent covering such product. Research collaboration activity defined in the agreement expired in 2006.

Charley's Fund Agreement

In October 2007, Charley's Fund, Inc., or Charley's Fund, a nonprofit organization that funds drug development and discovery initiatives specific to DMD, awarded us a $2.45 million research grant and, in May 2009, the grant authorization was increased to a total of $5.0 million. Pursuant to the related sponsored research agreement, the grant was provided to support the development of product candidates related to exon 50 skipping using our proprietary exon skipping technologies. As of December 31, 2011, Charley's Fund has made payments of approximately $3.4 million to us. Revenue associated with this research and development arrangement is recognized based on the proportional performance method, using the payment received method. To date, we have

recognized $60,000 as revenue, but did not recognize any revenue for the years ended December 31, 2011, 2010 and 2009. We do not expect to receive any incremental funding under the grant and have deferred $3.3 million of previous receipts which are anticipated to be recognized as revenue once we complete the remaining milestones and they are agreed to by Charley's Fund.

Under the terms of the sponsored research agreement, as amended, if we and any of our strategic partners elect to discontinue the development and commercialization of any product containing any molecular candidate arising or derived from the research sponsored by Charley's Fund for reasons other than safety or efficacy, we must grant to Charley's Fund an exclusive, royalty-bearing, fully-paid, worldwide license, with right of sublicense, to any such product. Depending on whether and when Charley's Fund obtains a license to any such product, percentage royalty payments on net sales required to be made by Charley's Fund to us under the terms of the sponsored research agreement, as amended, would be in the mid single digits. Under the terms of the sponsored research agreement, as amended, if we are able to successfully commercialize any molecular candidate arising or derived from the research sponsored by Charley's Fund either through sales of products or through licensing or partnership arrangements with a third party that include rights for such third party to sell, distribute, promote or market such products or the underlying intellectual property, then we are obligated to repay the research funds paid to us by Charley's Fund, up to an amount equal to the total amount of funds provided by Charley's Fund to us. In connection with this repayment obligation, we agreed that we would pay a mid range single-digit percentage royalty on net sales of products containing any molecular candidate arising or derived from the research sponsored by Charley's Fund and a mid-teens amount of any upfront cash and/or milestone payments received from a licensing or partnership arrangement with a third party with respect to such products (in each case, up to an amount equal to the total amount of funds provided by Charley's Fund to us). This agreement will terminate by its own terms at the completion of the research being sponsored by Charley's Fund. The AVI technology upon which the agreement is based is covered by certain patents, the last of which expires following the termination of the agreement.

Previously, we noted unexpected toxicology findings in the kidney as part of our series of preclinical studies for AVI-5038, our PPMO-based candidate designed for the treatment of individuals with DMD who have an error in the gene coding for dystrophin that can be treated by skipping exon 50. We have conducted additional preclinical studies and have not alleviated the toxicity problem. Pursuant to the terms of our agreement with Charley's Fund, the receipt of additional funds is tied to the satisfaction of certain clinical milestones. Because of the toxicity issues with AVI-5038, satisfaction of the additional milestones under the agreement is unlikely and we do not expect to receive any additional funds from Charley's Fund. We are currently evaluating alternatives regarding the development of AVI-5038, but in parallel, PMO-based therapeutics, which lack the conjugated peptide, are being considered for further development options.

Manufacturing

We believe we have developed proprietary manufacturing techniques that allow synthesis and purification of our product candidates to support clinical development. We have entered into certain manufacturing and supply arrangements with third party suppliers which will in part utilize these techniques to support continued development of certain of our product candidates. We have additionally contracted with several suppliers of commercial active pharmaceutical ingredients, or APIs, to develop, scale-up the manufacturing process, and ultimately manufacture our products to support commercialization. We do not have, and do not intend to establish in the near term, any of our own internal manufacturing capability to support our product candidates.

For our Ebola and Marburg hemorrhagic fever virus development programs, we have entered into supply agreements with two multinational manufacturing firms for the production of the API for Ebola and Marburg therapeutics. Due to their technical expertise and the sophistication of their manufacturing facilities, we are also considering the same two multinational manufacturing firms for the scale-up of the API in our DMD program. There is a limited number of companies that can produce PMO in the quantities and with the quality and purity

that we require for our development efforts. If we are required to seek alternative supply arrangements, the resulting delays and potential inability to find a suitable replacement could materially and adversely impact our business.

We also have supply arrangements with several preferred manufacturing firms for the production of the custom raw materials required for PMO production. We believe there are several contract manufacturers capable of manufacturing these materials, and as our products advance, more suppliers might become necessary; however, establishing a relationship with alternative suppliers can be a lengthy process and might cause delays in our development efforts and could materially and adversely impact our business.

Manufacturers and suppliers of product candidates are subject to the FDA's current Good Manufacturing Practices, or cGMP, requirements, and other rules and regulations prescribed by foreign regulatory authorities. We depend on our third party suppliers and manufacturers for continued compliance with cGMP requirements and applicable foreign standards.

Sales and Marketing Strategy

We have not obtained regulatory approval for any of our product candidates and thus have not yet established a commercial organization or distribution capabilities. Due to the rare nature of DMD and the lack of disease-modifying treatments, patients suffering from DMD, together with their physicians, often have a high degree of organization and are well informed, which may simplify the identification of a target population for eteplirsen, our lead product candidate, if it is approved. We believe that, if approved for commercial sale, it will be possible to commercialize eteplirsen with a relatively small specialty sales force that calls on the physicians, foundations and other patient-advocacy groups focused on DMD. Our current expectation is to commercialize eteplirsen ourselves in the United States and plan to recruit a sales force and take other steps to establish the necessary commercial infrastructure at such time as we believe that eteplirsen is approaching marketing approval. However, we may also consider entering into arrangements with other pharmaceutical or biotechnology companies for the marketing and sale of our products either globally or on a country by country basis.

Patents and Proprietary Rights

Our success depends in part upon our ability to protect our core technology and intellectual property. To accomplish this, we rely on a combination of intellectual property rights, including patents, trade secrets, copyrights and trademarks, and contractual protections.

We seek appropriate patent protection for our proprietary technologies by filing patent applications in the United States and other countries. As of February 29, 2012, we owned or controlled approximately 276 U.S. and corresponding foreign patents and 191 U.S. and corresponding foreign patent applications. We intend to protect our proprietary technology with additional filings as appropriate.

Our patents and patent applications are directed to our product candidates as well as to our RNA-based technology platforms. Although we believe our patents and patent applications provide us with a competitive advantage, the patent positions of biotechnology and pharmaceutical companies can be uncertain and involve complex legal and factual questions. We and our collaborators may not be able to develop patentable products or processes or obtain patents from pending patent applications. Even if patent claims are allowed, the claims may not issue, or in the event of issuance, may not be sufficient to protect the technology owned by or licensed to us or our collaborators. For example, our competitor Prosensa has rights to European Patent No. EP 1619249. We opposed this patent in the Opposition Division of the European Patent Office, or the Opposition Division, and in November 2011, we announced that, although we succeeded in invalidating some of the patent's claims, the Opposition Division maintained in amended form certain claims of this patent relating to the treatment of DMD by skipping dystrophin exons 51 and 46. We and Prosensa both have the right to appeal this decision; however, pending final resolution of this matter and any appeal thereof, the patent at issue may provide the basis for

Prosensa or other parties that have rights to such patent to assert that our drug eteplirsen infringes on such patent. A final resolution of this opposition proceeding may take a number of years and the outcome cannot be predicted or determined as of the date of this report. We are also aware of certain claims that have issued to Prosensa in Japan that may provide the basis for Prosensa or other parties that have rights to these claims to assert that our drug eteplirsen infringes on such claims. We believe we have a basis to invalidate some or all of these claims and are evaluating the potential initiation of invalidation proceedings. Because we have not yet initiated an invalidation proceeding in Japan, the outcome and timing of such proceeding cannot be predicted or determined as of the date of this report. If we are unsuccessful in invalidating other of Prosensa's claims or if previously invalidated claims are restored on appeal, our ability to commercialize both eteplirsen and other therapeutic candidates for our pan-exon strategy could be materially impaired. We are also aware of certain claims that Prosensa has rights to in the United States that may provide the basis for Prosensa or other parties that have rights to these claims to assert that our drug eteplirsen infringes on such claims. We believe we have valid defenses to any such allegations or a basis to invalidate some or all of these claims and do not believe that Prosensa's patent seriously harms our ability to develop and commercialize our products; however, we cannot be certain of this. The DMD patent landscape is continually evolving and multiple parties, both commercial entities and academic institutions, may have rights to claims that could provide these parties a basis to assert that our product candidates infringe on these claims. Similarly, we may be able to assert that certain activities engaged in by these parties infringe on our patent rights. There has been, and we believe that there will continue to be, significant litigation in the biopharmaceutical and pharmaceutical industries regarding patent and other intellectual property rights. We also cannot be certain that other third parties will not assert patent infringement in the future with respect to any of our development programs.

Our clinical product candidates and our technology are protected by composition and use patents and patent applications. Patent protection afforded by the patents and patent applications covering our product candidates and out technology will expire over the following time frames:

Product Candidate / Technology	Expiration of Patent Protection
Eteplirsen	2025 (patents) – 2029 (patents)
Other DMD exons	2025 (patent applications) – 2029 (patents)
Exon-skipping	2013 (patents) – 2023 (patents)
Antivirals (Ebola, Marburg, Dengue and Influenza)	2022 (patents) – 2030 (patent applications)
Chemistry (PPMO, PMO*plus*® and PMO-X™)	2012 (patents) – 2032 (patent applications)
Antibacterials	2018 (patents) – 2031 (patent applications)
Other rare diseases	2025 (patent applications) – 2032 (patent applications)
Other targets and programs	2019 (patents) – 2032 (patent applications)

Some of our patents on core technologies expired in 2008, including a patent for our basic PMO chemistry. However, as we continue to advance the research supporting our PMO-based technologies, we believe that the patented and likely patentable improvements we are developing will provide the necessary basis to develop and exclusively commercialize our products. We also rely on trade secrets and proprietary know-how, especially when we do not believe that patent protection is appropriate or can be obtained. Our policy is to require each of our employees, consultants and advisors to execute a confidentiality and inventions assignment agreement before beginning their employment, consulting or advisory relationship with us. These agreements provide that the individual must keep confidential and not disclose to other parties any confidential information developed or learned by the individual during the course of their relationship with us except in limited circumstances. These agreements also provide that we shall own all inventions conceived by the individual in the course of rendering services to us.

We are the owner of federal trademark registrations for four registered trademarks in the United States: AVI BioPharma ®, Cytoporter®, PMO*plus*® and NeuGene®. We have two pending trademark applications in the

United States for PMO-X™. We are the owner of international trademark registrations for Kepler Pharmaceuticals ® in the European Community, Australia, New Zealand, Mexico, Norway and Switzerland; however, we have decided to let these registrations for Kepler Pharmaceuticals ® expire at the end of their terms and will not seek to renew them. We have a pending international trademark application for AVI BioPharma in the European Community, which a third party is currently opposing. We have licensed certain technology to supplement and support certain of our core technologies. We have certain obligations and minimum royalties under those agreements, which costs are not material to our business and can be terminated at our discretion with minimal notice.

Our commercial success will depend in part on obtaining and maintaining patent protection and trade secret protection of the use, formulation and structure of our product candidates, and the methods used to manufacture them, as well as successfully defending these patents against third-party challenges. Our ability to protect our product candidates from unauthorized making, using, selling, offering to sell or importing by third parties is dependent on the extent to which we have rights under valid and enforceable patents that cover these activities.

We do not have patents or patent applications in every jurisdiction where there is a potential commercial market for our product candidates. For each of our programs, our decision to seek patent protection in specific foreign markets, in addition to the United States, is based on many factors, including:

- our available resources;
- the size of the commercial market;
- the presence of a potential competitor in the market; and
- whether the legal authorities in the market effectively enforce patent rights.

We continually evaluate our patent portfolio and patent strategy and believe our owned and licensed patents and patent applications provide us with a competitive advantage; however, if markets where we do not have patents or patent applications become commercially important, our business may be adversely affected.

The patent positions of pharmaceutical, biotechnology and other life sciences companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in biotechnology patents has emerged to date in the United States, and tests used for determining the patentability of patent claims in all technologies are in flux. In addition, there is no assurance as to the degree and range of protections any of our patents, if issued, may afford us or whether patents will be issued. For example, patents which may issue to us may be subjected to further governmental review that may ultimately result in the reduction of their scope of protection, and pending patent applications may have their requested breadth of protection significantly limited before being issued, if issued at all. The pharmaceutical, biotechnology and other life sciences patent situation outside the United States is even more uncertain. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in the patents that we own or have licensed or in third-party patents. Further, since publication of discoveries in scientific or patent literature often lags behind actual discoveries, there is no assurance that we were the first creator of inventions covered by our pending patent applications, or that we were the first to file patent applications for these inventions.

Government Regulation

The testing, manufacturing, labeling, advertising, promotion, distribution, export and marketing of our products are subject to extensive regulation by governmental authorities in the United States and in other countries. In the United States, the FDA, under the Federal Food, Drug and Cosmetic Act, or FDCA, and its

implementing regulations, regulates pharmaceutical products. Failure to comply with applicable U.S. requirements may subject us to administrative or judicial sanctions, such as FDA refusal to approve pending NDAs, withdrawal of approval of approved products, warning letters, untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, civil penalties and/or criminal prosecution.

Drug Approval Process

To obtain FDA approval of a product candidate, we must, among other things, submit data providing substantial evidence of safety and efficacy of the product, as well as detailed information on the manufacture and composition of the product candidate and proposed labeling. The testing and collection of data and the preparation of necessary applications are expensive and time-consuming. The FDA may not act quickly or favorably in reviewing these applications, and we may encounter significant difficulties or costs in our efforts to obtain FDA approvals that could delay or preclude us from marketing our products.

The steps required before a drug may be approved for marketing in the United States generally include:

- preclinical laboratory tests and animal tests;
- submission to the FDA of an Investigational New Drug Application, or IND, for human clinical testing, which must become effective before human clinical trials commence;
- adequate and well-controlled human clinical trials to establish the safety and efficacy of the drug product for each indication;
- the submission to the FDA of a New Drug Application, or NDA;
- satisfactory completion of an FDA inspection of the manufacturing facilities at which the product is made to assess compliance with cGMP;
- potential FDA audit of the nonclinical and clinical trial sites that generated the data in support of the NDA; and
- FDA review and approval of the NDA.

Preclinical studies may include laboratory evaluations of the product chemistry, toxicity, and formulation, as well as animal studies to assess the potential safety and efficacy of the product candidate. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements. The results of the preclinical studies, together with manufacturing information and analytical data, are submitted to the FDA as part of the IND, which must become effective before clinical trials may be commenced. The IND will become effective automatically 30 days after receipt by the FDA, unless the FDA raises concerns or questions about the conduct of the clinical trials as described in the protocol submitted as part of the IND prior to that time. In this case, the trials are placed on clinical hold, and the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can proceed.

Clinical trials involve the administration of the product candidate to healthy volunteers or participants under the supervision of a qualified principal investigator. Clinical trials are conducted under protocols detailing the objectives of the study, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as part of the IND. Clinical trials must be conducted in accordance with the FDA's good clinical practices requirements and state subject rights laws. Further, each clinical trial must be reviewed and approved by an independent institutional review board, or IRB, at or servicing each institution at which the clinical trial will be conducted. The IRB will consider, among other things, clinical trial design, participant informed consent, ethical factors, the safety of human subjects, and the possible liability of the institution. The FDA may order the partial, temporary or permanent discontinuation of a clinical trial at any time or impose other sanctions if it believes that the clinical trial is not being conducted in accordance with

FDA requirements or presents an unacceptable risk to the clinical trial subjects. The IRB may also require the clinical trial at that site to be halted, either temporarily or permanently, for failure to comply with the IRB's requirements, or may impose other conditions.

Clinical trials typically are conducted in three sequential phases prior to approval, but the phases may overlap. A fourth, or post-approval, phase may include additional clinical studies. These phases generally include the following; however, in the rare disease space, the number of subjects involved in each phase can be significantly less than the general parameters set forth below:

- *Phase I*. Phase I clinical trials involve the initial introduction of the drug into human subjects. These studies are designed to determine the safety of usually single doses of the compound and determine any dose limiting intolerance, as well as evidence of the metabolism and pharmacokinetics of the drug in humans. Phase I studies usually involve less than 100 subjects and are most commonly conducted in healthy adult volunteers.
- *Phase II*. Phase II clinical trials usually involve studies in a limited patient population to evaluate the efficacy of the drug for specific, targeted indications, to determine dosage tolerance and optimal dosage, and to identify possible adverse effects and safety risks. Phase II studies usually involve patients with the disease under investigation and numbers may vary from several dozen to several hundred.
- *Phase III*. If a compound is found to be potentially effective and to have an acceptable safety profile in Phase II (or sometimes Phase I) studies, the clinical trial program will be expanded to further confirm clinical efficacy, optimal dosage and safety within an expanded patient population which may involve geographically dispersed clinical trial sites. Phase III studies usually include several hundred to several thousand patients. Generally, two adequate and well-controlled Phase III clinical trials are required by the FDA for approval of an NDA.
- *Phase IV*. Phase IV clinical trials are studies required of or agreed to by a sponsor that are conducted after the FDA has approved a product for marketing. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of drugs approved under accelerated approval regulations. If the FDA approves a product while a company has ongoing clinical trials that were not necessary for approval, a company may be able to use the data from these clinical trials to meet all or part of any Phase IV clinical trial requirement. Failure to promptly conduct Phase IV clinical trials could result in withdrawal of approval for products approved under accelerated approval regulations.

A company seeking marketing approval for a new drug in the United States must submit to the FDA the results of the preclinical and clinical trials, together with, among other things, detailed information on the manufacture and composition of the product candidate and proposed labeling, in the form of an NDA, including payment of a user fee. The FDA reviews all NDAs submitted before it accepts them for filing and may request additional information rather than accepting an NDA for filing. Once the submission is accepted for filing, the FDA begins an in-depth review of the NDA. Under the goals and policies agreed to by the FDA under the Prescription Drug User Fee Act, or PDUFA, the FDA has ten months in which to complete its initial review of a standard NDA and respond to the applicant, and six months for a priority NDA. The FDA does not always meet its PDUFA goal dates for standard and priority NDAs. The review process and the PDUFA goal date may be extended by three months if the FDA requests or the NDA sponsor otherwise provides additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date. If the FDA's evaluations of the NDA and the clinical and manufacturing procedures and facilities are favorable, the FDA may issue an approval letter. If the FDA finds deficiencies in the NDA, it may issue a complete response letter, which contains the conditions that must be met in order to secure final approval of the NDA. If and when those conditions have been met to the FDA's satisfaction, the FDA will issue an approval letter, authorizing commercial marketing of the drug for certain indications. If the FDA's evaluation of the NDA submission and the clinical and manufacturing procedures and facilities is not favorable, the FDA may

refuse to approve the NDA. Sponsors that receive a complete response letter may submit to the FDA information that represents a complete response to the issues identified by the FDA. Resubmissions by the NDA sponsor in response to a complete response letter trigger new review periods of varying length (typically two to six months) based on the content of the resubmission. The FDA may also refer an application to an appropriate advisory committee, typically a panel of clinicians, for review, evaluation and a recommendation as to whether the application should be approved. The FDA is not bound by the recommendations of the advisory committee.

The FDA has various programs, including fast track, priority review, and accelerated approval (Subpart H), that are intended to expedite or simplify the process for reviewing drugs, and/or provide for approval on the basis of surrogate endpoints or restricted distribution. Generally, drugs that may be eligible for one or more of these programs are those for serious or life-threatening conditions, those with the potential to address unmet medical needs, and those that provide meaningful benefit over existing treatments. We were granted fast track status for eteplirsen in 2007 and for our Ebola drug candidate in 2011. We cannot be sure that any of our other drug candidates will qualify for any of these programs, or that, if a drug does qualify, that the review time will be shorter than a standard review. Currently, there are several legislative proposals to improve the regulatory review system, some of which may impact the development of drugs for rare diseases such as eteplirsen. At this time, it is unclear which proposals Congress may incorporate into the PDUFA V reauthorization that is anticipated to occur by September 2012 when PDUFA IV expires.

Often, even after a drug has been approved by the FDA for sale, the FDA may require that certain post-approval requirements be satisfied, including the conduct of additional clinical studies. If such post-approval conditions are not satisfied, the FDA may withdraw its approval of the drug. In addition, holders of an approved NDA are required to:

- report certain adverse reactions to the FDA;
- submit annual and periodic reports summarizing product information and safety data;
- comply with certain requirements concerning advertising and promotional labeling for their products; and
- continue to have quality control and manufacturing procedures conform to cGMP after approval.

The FDA periodically inspects the sponsor's records related to safety reporting and/or manufacturing; this latter effort includes assessment of compliance with cGMP. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. Discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved NDA, including withdrawal of the product from the market.

Many other countries and jurisdictions have similar drug development and regulatory review processes. We have conducted clinical trials in the United Kingdom and intend to submit for marketing approval in countries other than the United States. Therefore, we will have to comply with the legal and regulatory requirements in the countries where we conduct trials and submit for marketing approval.

Animal Rule

In the case of product candidates that are intended to treat rare life-threatening diseases, such as infection caused by exposure to various hemorrhagic fever viruses, conducting controlled clinical trials to determine efficacy may be unethical or unfeasible. Under regulations issued by the FDA in 2002, often referred to as the "Animal Rule," the approval of such products can be based on clinical data from trials in healthy human subjects that demonstrate adequate safety, and immunogenicity and efficacy data from adequate and well-controlled animal studies. Among other requirements, the animal studies must establish that the drug or biological product is reasonably likely to produce clinical benefits in humans. Because the FDA must agree that data derived from animal studies may be extrapolated to establish safety and effectiveness in humans, seeking approval under the

Animal Rule adds significant time, complexity and uncertainty to the testing and approval process. No animal model is established as predicting human outcomes in the prevention or treatment of any filovirus disease. We have yet to demonstrate the predictive value of our animal studies to the FDA's satisfaction. In addition, products approved under the Animal Rule are subject to additional requirements including post-marketing study requirements, restrictions imposed on marketing or distribution or requirements to provide information to patients. No novel medical countermeasures have been approved using this pathway to date. The two countermeasures that have been approved under the Animal Rule were extensions of existing indications with human data to support efficacy.

Emergency Use Authorization

The Commissioner of the FDA, under delegated authority from the Secretary of the Department of Health and Human Services, or DHHS, may, under certain circumstances, issue an Emergency Use Authorization, or EUA, that would permit the use of an unapproved drug product or unapproved use of an approved drug product. Before an EUA may be issued, the Secretary must declare an emergency based on one of the following grounds:

- a determination by the Secretary of Department of Homeland Security that there is a domestic emergency, or a significant potential for a domestic emergency, involving a heightened risk of attack with a specified biological, chemical, radiological or nuclear agent or agents;
- a determination by the Secretary of the DoD that there is a military emergency, or a significant potential for a military emergency, involving a heightened risk to United States military forces of attack with a specified biological, chemical, radiological, or nuclear agent of agents; or
- a determination by the Secretary of the DHHS of a public health emergency that effects or has the significant potential to affect, national security, and that involves a specified biological, chemical, radiological, or nuclear agent or agents, or a specified disease or condition that may be attributable to such agent or agent.

In order to be the subject of an EUA, the FDA Commissioner must conclude that, based on the totality of scientific evidence available, it is reasonable to believe that the product may be effective in diagnosing, treating, or preventing a disease attributable to the agents described above; that the product's potential benefits outweigh its potential risks; and that there is no adequate, approved alternative to the product.

Although an EUA cannot be issued until after an emergency has been declared by the Secretary of the DHHS, the Agency strongly encourages an entity with a possible candidate product, particularly one at an advanced stage of development, to contact the FDA Center responsible for the candidate product before a determination of actual or potential emergency. Such an entity may submit a request for consideration that includes data to demonstrate that, based on the totality of scientific evidence available, it is reasonable to believe that the product may be effective in diagnosing, treating, or preventing the serious or life-threatening disease or condition. This is called a pre-EUA submission and its purpose is to allow FDA review considering that during an emergency, the time available for the submission and review of an EUA request may be severely limited. We intend to work with DoD in the future on pre-EUA submissions with respect to our product candidates intended to treat Marburg and Ebola in order to inform and expedite the FDA's issuance of an EUA, should one become necessary in the event of an emergency.

Orphan Drug Designation and Exclusivity

Some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. The FDA may grant orphan drug designation to drugs intended to treat a rare disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States for which there is no reasonable expectation that the cost of developing and making available in the United States a drug for this type of disease or condition will be recovered from sales in the United States for that drug. In the United States, orphan drug designation must be requested before

submitting an application for marketing approval. An orphan drug designation does not shorten the duration of the regulatory review and approval process. The approval of an orphan designation request does not alter the standard regulatory requirements and process for obtaining marketing approval. Safety and efficacy of a compound must be established through adequate and well-controlled studies. If a product which has an orphan drug designation subsequently receives the first FDA approval for the indication for which it has such designation, the product is entitled to an orphan drug exclusivity period, which means the FDA may not grant approval to any other application to market a different drug for the same indication for a period of seven years, except in limited circumstances, such as where an alternative product demonstrates clinical superiority to the product with orphan exclusivity. In addition, holders of exclusivity for orphan drugs are expected to assure the availability of sufficient quantities of their orphan drugs to meet the needs of patients. Failure to do so could result in the withdrawal of marketing exclusivity for the drug. An additional six months of exclusivity may be granted to a sponsor of an NDA, if the sponsor conducted a pediatric study or studies of such product. This process is initiated by FDA as a written request for pediatric studies that applies to sponsor's product. If the sponsor conducts qualifying studies and the studies are accepted by the FDA, then an additional six months of pediatric exclusivity will attach to any other regulatory exclusivity or patent protection applicable to any drug product containing the same active moiety as the drug studied and for which the party submitting the studies holds the NDA. Competitors may receive approval of different drugs or biologics for the indications for which the orphan product has exclusivity. We have been granted orphan drug designation for eteplirsen and AVI-5038 in the United States and European Union.

The European Orphan Drug Regulation is considered for drugs intended to diagnose, prevent or treat a life-threatening or very serious condition afflicting five or fewer out of 10,000 people in the EU, including compounds that for serious and chronic conditions would likely not be marketed without incentives due to low market return on the sponsor's development investment. The medicinal product considered should be of significant benefit to those affected by the condition. Benefits of being granted orphan drug status are significant, including eight years of data exclusivity, two years of marketing exclusivity and a potential one year extension of both. The EU Community and Member States may not accept or grant for ten years a new marketing authorization or application for another drug for the same therapeutic indication as the orphan drug, although the ten year period can be reduced to six years if, at the end of the fifth year, available evidence establishes that the product is sufficiently profitable not to justify maintenance of market exclusivity. A supplementary protection certificate may extend the protection six months beyond patent expiration if that is later than the orphan drug exclusivity period. To apply for the supplementary protection, a pediatric investigation plan, or PIP, must be included in the market application. In Europe all drugs now seeking a marketing authorization need to have a PIP agreed with the EMA before it can be approved, even if it is a drug being developed specifically for a pediatric indication. If a product is developed solely for use in the pediatric population, then a Pediatric Use Marketing Authorization, or PUMA, may provide eight years of data exclusivity and ten years of marketing exclusivity. This PUMA applies to our DMD compounds, eteplirsen and AVI-5038.

Other Regulatory Requirements

In addition to regulation by the FDA and certain state regulatory agencies, we are also subject to a variety of foreign regulations governing clinical trials and the marketing of other products. Outside of the United States, our ability to market a product depends upon receiving a marketing authorization from the appropriate regulatory authorities. The requirements governing the conduct of clinical trials, marketing authorization, pricing and reimbursement vary widely from country to country. In any country, however, we will only be permitted to commercialize our products if the appropriate regulatory authority is satisfied that we have presented adequate evidence of safety, quality and efficacy. Whether or not FDA approval has been obtained, approval of a product by the comparable regulatory authorities of foreign countries must be obtained prior to the commencement of marketing of the product in those countries. The time needed to secure approval may be longer or shorter than that required for FDA approval. The regulatory approval and oversight process in other countries includes all of the risks associated with regulation by the FDA and certain state regulatory agencies as described above.

Pharmaceutical Pricing and Reimbursement

In both U.S. and foreign markets, our ability to commercialize our products successfully, and to attract commercialization partners for our products, depends in significant part on the availability of adequate financial coverage and reimbursement from third party payors, including, in the United States, governmental payors such as the Medicare and Medicaid programs, managed care organizations, and private health insurers. Third party payors are increasingly challenging the prices charged for medicines and examining their cost effectiveness, in addition to their safety and efficacy. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost effectiveness of our products. Even with the availability of such studies, our products may be considered less safe, less effective or less cost-effective than alternative products, and third party payors may not provide coverage and reimbursement for our product candidates, in whole or in part.

Political, economic and regulatory influences are subjecting the healthcare industry in the United States to fundamental changes. There have been, and we expect there will continue to be, legislative and regulatory proposals to change the healthcare system in ways that could significantly affect our business, including the Patient Protection and Affordable Care Act of 2010. We anticipate that the U.S. Congress, state legislatures and the private sector will continue to consider and may adopt healthcare policies intended to curb rising healthcare costs. These cost containment measures include:

- controls on government funded reimbursement for drugs;
- controls on healthcare providers;
- challenges to the pricing of drugs or limits or prohibitions on reimbursement for specific products through other means;
- reform of drug importation laws; and
- expansion of use of managed care systems in which healthcare providers contract to provide comprehensive healthcare for a fixed cost per person.

We are unable to predict what additional legislation, regulations or policies, if any, relating to the healthcare industry or third party coverage and reimbursement may be enacted in the future or what effect such legislation, regulations or policies would have on our business. Any cost containment measures, including those listed above, or other healthcare system reforms that are adopted could have a material adverse effect on our business prospects.

Competition

The pharmaceutical and biotechnology industries are intensely competitive, and any product candidate developed by us would likely compete with existing drugs and therapies. There are many pharmaceutical companies, biotechnology companies, public and private universities, government agencies and research organizations that compete with us in developing various approaches to the treatment of rare and infectious diseases. Many of these organizations have substantially greater financial, technical, manufacturing and marketing resources than we have. Several of them have developed or are developing therapies that could be used for treatment of the same diseases that we are targeting. In addition, many of these competitors have significantly greater commercial infrastructures than we have. Our ability to compete successfully will depend largely on:

- our ability to complete clinical development and obtain regulatory approvals for our product candidates;
- the efficacy, safety and reliability of our product candidates;
- the timing and scope of regulatory approvals;
- product acceptance by physicians and other health care providers;

- protection of our proprietary rights and the level of generic competition;
- the speed at which we develop product candidates;
- our ability to supply commercial quantities of a product to the market;
- obtaining reimbursement for product use in approved indications;
- our ability to recruit and retain skilled employees; and
- the availability of substantial capital resources to fund development and commercialization activities, including the availability of funding from the U.S. Government.

DMD Program Competition. Currently, no product has been approved for the treatment of DMD. Companies including, but not limited to, Prosensa in collaboration with GlaxoSmithKline plc, or GSK, have product candidates in development for the treatment of DMD.

The Prosensa / GSK program commenced treatment in December 2010 in a Phase III clinical study in ambulant individuals with DMD who have a dystrophin gene mutation amenable to treatment by skipping exon 51. Prosensa's candidate for skipping exon 51, GSK2402968, utilizes the same exon-skipping mechanism of action as eteplirsen, but the compound uses a different chemistry, 2'O-methyl-phosphorothioate, which has the potential for different performance, safety and tolerability characteristics than eteplirsen. This randomised, placebo controlled study is still enrolling, with a target enrollment of 180 participants who will be dosed for 48 weeks. The primary efficacy endpoint is a measure of muscle function using the six minute walking distance test. In September 2010, the Prosensa / GSK program commenced a Phase II double-blind, placebo-controlled study. This study is designed to assess the efficacy of two different dosing regimens of GSK2402968 administered over 24 weeks in DMD patients, and then to continue observing the patients over a second 24 week interval for a total study time frame of 48 weeks. This study completed enrollment with 54 DMD patients in October 2011. If GSK2402968 shows significant efficacy in the first 24 weeks of the study, it is possible that the study may be stopped early and read-out at or before our Phase IIb study of eteplirsen. Data from this study could also be used by Prosensa / GSK to seek commercial approval of GSK2402968 in Europe and/or the United States. These studies may or may not prove that GSK2402968 is safer and more efficacious than eteplirsen; however, data obtained from these studies could aid Prosensa / GSK in obtaining marketing approval before our lead DMD product candidate eteplirsen.

Hemorrhagic Fever Virus Programs. No specific treatment has been proven effective, and no vaccine currently exists for either Ebola or Marburg. Investigational compounds cannot be tested on humans except in outbreak environments so these agents must be tested extensively in animals and meet strict government regulations. Vaccine development is in the early stages in both the biotech industry and by U.S. government agencies (e.g., the National Institute of Allergy and Infectious Diseases and the Centers for Disease Control and Prevention). In February 2012, Tekmira Pharmaceuticals Corp. initiated a Phase I trial for TKM-Ebola, a systemically delivered RNAi therapeutic for the treatment of Ebola virus infection. We commenced initial human safety studies of our therapeutic candidates against the Ebola and Marburg viruses in May 2011.

Influenza Program. Currently, there are two therapeutic products for influenza that have received market approval from the FDA and are recommended for use in the United States. These are: (1) oseltamivir (Tamiflu), a Roche Holding and Gilead product; and (2) zanamivir (Relenza), a GlaxoSmithKline product. In addition to these products, Daiichi Sankyo's laninamivir and BioCryst's peramivir were launched in 2010 in Japan. Currently, DHHS funding is helping support clinical trials of BioCryst's peramivir and Biota's laninamivir. In addition, other companies including, Toyama Chemical (a subsidiary of Fujifilm), have influenza therapeutic compounds in development. Toyama Chemical's favipiravir is in a Phase II clinical trial in the United States and has completed a Phase III trial in Japan. DHHS is currently seeking additional antiviral therapeutics for the treatment and/or prophylaxis of influenza A and B infections.

In addition to therapeutic products, other companies are focusing development efforts on universal influenza vaccines, including BiondVax Pharmaceuticals Ltd., which initiated a Phase IIa trial of its universal influenza vaccine candidate in October 2010. Successful development of a universal influenza vaccine could lead to a reduction in the number of influenza cases and, therefore, the market size.

Platform Technology. We believe that other biotechnology and pharmaceutical companies share a focus on RNA-based drug discovery and development. Competitors with respect to our RNA-based technologies include, but are not limited to, Alnylam Pharmaceuticals, Inc., Tekmira Pharmaceuticals Corp., Isis Pharmaceuticals, Inc., Prosensa, and Santaris Pharma A/S. We are unaware of any other commercial organization that is developing therapeutics based on a PMO chemistry platform.

Research and Development

We devote a substantial portion of our resources to developing new product candidates. During 2011, 2010 and 2009, we expended approximately $66.9 million, $36.0 million and $24.4 million, respectively, on research and development activities.

Employees

As of December 31, 2011, we had 98 employees, 42 of which hold advanced degrees. Of these employees, 63 are engaged directly in research and development activities and 35 are in administration. None of our employees are covered by collective bargaining agreements and we consider relations with our employees to be good.

Item 1A. Risk Factors.

Factors That Could Affect Future Results

Set forth below and elsewhere in this Annual Report on Form 10-K, and in other documents we file with the SEC are descriptions of risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements contained in this Annual Report on Form 10-K. Because of the following factors, as well as other variables affecting our operating results, past financial performance should not be considered a reliable indicator of future performance and investors should not use historical trends to anticipate results or trends in future periods. The risks and uncertainties described below are not the only ones facing us. Other events that we do not currently anticipate or that we currently deem immaterial also affect our results of operations and financial condition.

Risks Relating to Our Business

Our product candidates are at an early stage of development, and it is possible that none of our product candidates will ever become commercial products.

Our product candidates are in relatively early stages of development. These product candidates will require significant further development, financial resources and personnel to obtain regulatory approval and develop into commercially viable products, if at all. Currently, eteplirsen in DMD, AVI-6002 in Ebola and AVI-7288 in Marburg are in active clinical development. The clinical development of AVI-7100 in influenza is currently paused and the rest of our product candidates are in preclinical development. We expect that much of our effort and many of our expenditures over the next several years will be devoted to development activities associated with eteplirsen and other exon-skipping candidates as part of our larger pan-exon strategy in DMD and our antiviral candidates. With current resources, we may be restricted or delayed in our ability to develop other clinical and preclinical product candidates.

Our ability to commercialize any of our product candidates, including eteplirsen, depends on first receiving required regulatory approvals, and it is possible that we may never receive regulatory approval (including any approval under Subpart H) for any of our product candidates based on an inability to adequately demonstrate the safety and effectiveness of our product candidates, lack of funding, changes in the regulatory landscape or other reasons. Even if a product candidate receives regulatory approval, the resulting product may not gain market acceptance among physicians, patients, healthcare payors and the medical community. Assuming that any of our product candidates receives the required regulatory approvals, commercial success will depend on a number of factors, including:

- establishment and demonstration of clinical efficacy and safety and acceptance of the same by the medical community;
- cost-effectiveness of the product;
- the availability of adequate reimbursement by third parties, including governmental payors such as the Medicare and Medicaid programs, managed care organizations, and private health insurers;
- the product's potential advantage over alternative treatment methods;
- whether the product can be produced in commercial quantities at acceptable costs;
- marketing and distribution support for the product; and
- any exclusivities applicable to the product.

Although to date we have been granted orphan status for two of our product candidates in DMD and are seeking orphan status for AVI-6002 and AVI-7288, we are not guaranteed to receive orphan exclusivity based on that status and would not enjoy such exclusivity in the event that another entity could get approval of the same product for the same indication before we receive market approval. Further, application of the orphan drug regulations in the United States and Europe is uncertain and we cannot predict how the respective regulatory bodies will interpret and apply the regulations to our or our competitors' product candidates. If another product

receives orphan drug status for an indication that we are targeting, and such product is approved for commercial sales before our product, regulators may interpret our product to be the same drug as the competing product and could prevent us from selling our product in the applicable territories. Furthermore, pediatric exclusivity only applies if another product with exclusivity has not received regulatory approval, so if another regulatory exclusivity or patent protection exists for the product once it is approved, we would not receive the benefit of any pediatric exclusivity.

If we are unable to develop and commercialize any of our product candidates, if development is delayed or if sales revenue from any product candidate that receives marketing approval is insufficient, we may never reach sustained profitability.

If we are unable to obtain or maintain required regulatory approvals, we will not be able to commercialize our product candidates, our ability to generate revenue will be materially impaired and our business will not be successful.

The research, testing, manufacturing, labeling, approval, selling, marketing and distribution of drug products are subject to extensive regulation by the FDA in the United States, and other regulatory authorities in other countries, with regulations differing from country to country. Marketing of our product candidates in the United States or foreign countries is not permitted until we obtain marketing approval from the FDA or other foreign regulatory authorities, and we may never receive regulatory approval for the commercial sale of any of our product candidates. Obtaining marketing approval is a lengthy, expensive and uncertain process and approval is never assured. As of the date of this report, we have not progressed to the point of preparing or filing the applications necessary to gain regulatory approvals. Further, the FDA and other foreign regulatory agencies have substantial discretion in the approval process, and determining when or whether regulatory approval will be obtained for any product candidate we develop. In this regard, even if we believe the data collected from clinical trials of our product candidates are promising, such data may not be sufficient to support approval by the FDA or any other foreign regulatory authority. In addition, the FDA or their advisors may disagree with our interpretations of data from preclinical studies and clinical trials. Regulatory agencies may approve a product candidate for fewer indications than requested or may grant approval subject to the performance of post-approval studies for a product candidate. Similarly, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our product candidates.

In addition, changes in regulatory requirements and guidance may occur and we may need to amend clinical trial protocols or other approval strategies to reflect these changes. Amendments may require us to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the costs, timing or successful completion of a clinical trial. Changes in our approval strategies may require additional studies that were not originally planned. Other factors may also impact our ability to commercialize our product candidates, including, for example, the fact that a therapeutic commercial product utilizing our RNA-based technologies has never been approved by any regulatory authority. Due to these factors, our current product candidates or any of our other future product candidates could take a significantly longer time to gain regulatory approval than we expect or may never gain regulatory approval, which could delay or eliminate any potential product revenue by delaying or terminating the potential commercialization of our product candidates.

If we receive regulatory approval for our product candidates, we will also be subject to ongoing FDA obligations and oversight, including adverse event reporting requirements, marketing restrictions and, potentially, other post-marketing obligations, all of which may result in significant expense and limit our ability to commercialize such products. The FDA's policies may also change and additional government regulations may be enacted that could prevent or delay regulatory approval of our product candidates or further restrict or regulate post-approval activities. We cannot predict the likelihood, nature or extent of adverse government regulation that may arise from future legislation or administrative action, either in the United States, or abroad. If we are not able to maintain regulatory compliance, we may be subject to civil and criminal penalties, we may not be permitted to market our products and our business could suffer. Any delay in, or failure to, receive or maintain regulatory approval for any of our product candidates could harm our business and prevent us from ever

generating meaningful revenues or achieving profitability. We will need to obtain regulatory approval from authorities in foreign countries to market our product candidates in those countries. We have not filed for regulatory approval to market our product candidates in any foreign jurisdiction. Approval by one regulatory authority does not ensure approval by regulatory authorities in other jurisdictions. If we fail to obtain approvals from foreign jurisdictions, the geographic market for our product candidates would be limited.

Our clinical trials may fail to demonstrate acceptable levels of safety and efficacy of our product candidates, which could prevent or significantly delay their regulatory approval.

To obtain the requisite regulatory approvals to market and sell any of our product candidates, we must demonstrate, through extensive preclinical and clinical studies, that the product candidate is safe and effective in humans. Ongoing and future clinical trials of our product candidates may not show sufficient safety or efficacy to obtain regulatory approvals.

Phase I clinical trials generally are not designed to test the efficacy of a product candidate but rather are designed to test safety, to study pharmacokinetics and pharmacodynamics and to understand the product candidate's side effects at various doses and dosing schedules in healthy volunteers. Delays in establishing the appropriate dosage levels can lead to delays in the overall clinical development of a product candidate. As of the date of this report, we do not believe that we have identified a consistently effective dose of eteplirsen for individuals with DMD. We initiated a U.S.-based Phase IIb clinical trial for eteplirsen at higher doses in August 2011 to further explore and identify a more consistently effective dose that may be more appropriate for future clinical trials and that can serve as a basis for approval by governmental regulatory authorities; however, we cannot assure you that these efforts will be successful. If a consistently effective dose is found in the U.S.-based clinical trial, we will expect to engage in discussions with regulatory authorities about the design and subsequent execution of any further studies which may be required. Regulatory authorities might require more extensive clinical trials than anticipated and conforming to any guidance regulatory authorities provide does not guarantee receipt of marketing approval, even if we believe our clinical trials are successful. Such additional clinical trials might include an open label "extension study" for all participants who have previously received eteplirsen, as well as other participants (e.g., non-ambulatory participants) and any additional placebo-controlled "pivotal" study or studies. If we are not able to establish an optimal dosage in this trial we may need to conduct additional dose-ranging trials before conducting our pivotal trials of the product. Any such additional clinical trials required by regulatory authorities would increase our costs and delay commercialization of eteplirsen.

Furthermore, success in preclinical and early clinical trials does not ensure that later larger-scale trials will be successful nor does it predict final results. Acceptable results in early trials may not be reproduced in later trials. For example, pivotal trials for eteplirsen will likely involve a larger number of participants to achieve statistical significance, will be expensive and will take a substantial amount of time to complete. As a result, we may conduct lengthy and expensive clinical trials of our product candidates, only to learn that the product candidate is not an effective treatment or is not superior to existing approved therapies, or has an unacceptable safety profile, which could prevent or significantly delay regulatory approval for such product candidate.

The Animal Rule is a new and seldom-used approach to seeking approval of a new drug and our infectious disease program may not meet the requirements for this ill-defined path to regulatory approval.

Clinical trials cannot be used to assess the efficacy of most biodefense countermeasures against rare and lethal pathogens due to ethical considerations and the relative infrequency of naturally occurring cases. In the United States, we plan to develop the therapeutic product candidates to treat Ebola and Marburg viruses using the Animal Rule regulatory mechanism. Pursuant to the Animal Rule, the sponsor of a drug product must demonstrate efficacy in animal models and safety in humans. There is no guarantee that the FDA will agree to this approach to the development of our infectious disease product candidates, considering that no validated animal model has been established as predicting human outcomes in the prevention or treatment of any filovirus disease. Animal models represent, at best, a rough approximation of efficacy in humans, and, as such, countermeasures developed using animal models will be untested until their use in humans during an emergency.

We have yet to demonstrate the predictive value of our animal studies to the FDA's satisfaction. If we fail to do so, we will have to demonstrate efficacy of AVI-6002 and AVI-7288 through adequate well-controlled trials in humans in order to obtain regulatory approval of these products in the United States, which, if possible, will greatly add to the time and expense required to commercialize these products. Furthermore, the Animal Rule mechanism has been used only rarely and questions remain regarding the FDA's interpretation and implementation. No novel products have been approved using the Animal Rule. It has thus far been used to extend the indicated use of two previously licensed products which had existing human efficacy data. We do not have any experience successfully navigating this approach to drug approval. Even if the Animal Rule represents a viable approach to seeking approval of AVI-6002 and AVI-7288, it may present challenges for gaining final regulatory approval for these product candidates, including an extended timeline to approval and less predictable study requirements. In addition, the FDA would require post-marketing human efficacy studies if the countermeasure is used in humans, which would most likely be in the aftermath of a bioterrorist attack. The ability to reliably perform efficacy clinical trials in the midst of a national crisis is uncertain.

The timing and conduct of animal studies may be further constrained given that filoviruses are classified for use only in BSL-4 laboratories. There are limited laboratories and staff world-wide that can work with these live viruses and companies will be competing for the limited availability of this critical infrastructure to test their countermeasures. Furthermore, we anticipate limits in conforming to GLP requirements given the requirement for BSL-4 containment.

We rely on U.S. government contracts to support several important research and development programs and substantially all of our revenue. If the U.S. government fails to fund such programs on a timely basis or at all, or such contracts are terminated, the results of our operations would be materially and adversely affected.

We rely on U.S. government contracts and awards to fund several of our development programs, including those for the Ebola and Marburg viruses and for substantially all of our current revenue. The funding of U.S. government programs is subject to Congressional appropriations. Congress generally appropriates funds on a fiscal year basis even though a program may extend over several fiscal years, as is the case with our DoD contract for the development of our Ebola and Marburg product candidates. Consequently, programs are often only partially funded initially and additional funds are committed only as Congress makes further appropriations. If appropriations for one of our programs become unavailable, or are reduced or delayed, our contracts may be terminated or adjusted by the government, which could have a negative impact on our future revenue under such contract or subcontract. From time to time, when a formal appropriation bill has not been signed into law before the end of the U.S. government's fiscal year, Congress may pass a continuing resolution that authorizes agencies of the U.S. government to continue to operate, generally at the same funding levels from the prior year, but does not authorize new spending initiatives, during a certain period. During such a period, or until the regular appropriation bills are passed, delays can occur in government procurement due to lack of funding and such delays can affect our operations during the period of delay. Additionally, the DoD is planning on hundreds of billions of dollars in cuts to defense spending over the next decade and faces a possible sequestration of an additional $600 billion over the same timeframe beginning in January 2013 unless Congress acts. These cuts would have widespread ramifications including on DoD's procurement and research and development programs. The 2004 Project BioShield Act which created the Special Reserve Fund for use by DHHS to purchase countermeasures over 10 years avoids the uncertainty of the annual appropriations process, but the $5.6 billion appropriation is rapidly depleting and will expire in 2013. Thus, the viability of DHHS as a potential customer hinges in part on Congress taking action to replenish the Special Reserve Fund.

In addition, U.S. government contracts generally also permit the government to terminate the contract, in whole or in part, without prior notice, at the government's convenience or for default based on performance. From time to time, we receive communications from the U.S. government regarding our performance, including requests for us to provide additional information and/or take certain steps to remedy noted deficiencies. While we work closely with our contacts at the U.S. government and believe we can adequately address issues raised through such communications, there is no guarantee that we will be able to adequately respond to all requests or

remedy all deficiencies cited. If one of our contracts is terminated for convenience, we would generally be entitled to payments for our allowable costs and would receive some allowance for profit on the work performed. If one of our contracts is terminated for default, we would generally be entitled to payments for our work that has been completed to that point. A termination arising out of our default could expose us to liability and have a negative impact on our ability to obtain future contracts. Furthermore, if we fail to satisfy certain performance or deliverable requirements or to adhere to development timelines, revenues associated with the satisfaction of such requirements or timelines may be delayed or may not be realized.

The termination of one or more of these government contracts, whether due to lack of funding, for convenience, for our failure to perform, or otherwise, or the occurrence of delays or product failures in connection with one or more of these contracts, could negatively impact our financial condition. Furthermore, we can give no assurance that we would be able to procure new U.S. government contracts to offset the revenue lost as a result of termination of any of our existing contracts. Even if our contracts are not terminated and are completed, there is no assurance that we will receive future government contracts.

Even if we successfully complete development of our Ebola and Marburg product candidates, the major, if not only, potential purchaser is the U.S. government. The lack of a commercial market makes us reliant upon the U.S. government to determine and communicate the market for biodefense countermeasures and government purchasing is subject to evolving threat assessments and shifting political priorities, which exacerbate market uncertainties. Within the DoD, the warfighter has evolving requirements specifically related to route of administration and time to treat. Until future studies are completed, it is unclear whether our drug candidates will successfully meet these requirements. If they do not, DoD may choose to terminate the contract. With respect to the civilian sector, Ebola and Marburg viruses are among the top chemical, biological, radiological, and nuclear threats to national security, yet DHHS has not defined the civilian requirement, making the broader demand for our drug candidates uncertain.

This expected dependence on government purchases presents additional challenges, since the government is incentivized to negotiate prices for countermeasures to just above their marginal cost of production, which would severely limit our profit potential. If companies resist low prices, governments can, in extreme cases, threaten compulsory licensing or purchase patent-breaching generics.

Our U.S. government contracts may be terminated and we may be liable for penalties under a variety of procurement rules and regulations and changes in government regulations or practices could adversely affect our profitability, cash balances or growth prospects.

We must comply with laws and regulations relating to the formation, administration and performance of U.S. government contracts, which affect how we do business with our customers. Such laws and regulations may potentially impose added costs on our business and our failure to comply with them may lead to penalties and the termination of our U.S. government contracts. Some significant regulations that affect us include:

- the Federal Acquisition Regulation and supplements, which regulate the formation, administration and performance of U.S. government contracts;
- the Truth in Negotiations Act, which requires certification and disclosure of cost and pricing data in connection with contract negotiations; and
- the Cost Accounting Standards, which impose accounting requirements that govern our right to reimbursement under certain cost-based government contracts.

Our contracts with the U.S. government are subject to periodic review and investigation. If such a review or investigation identifies improper or illegal activities, we may be subject to civil or criminal penalties or administrative sanctions, including the termination of contracts, forfeiture of profits, the triggering of price reduction clauses, suspension of payments, fines and suspension or debarment from doing business with U.S. government agencies. We could also suffer harm to our reputation if allegations of impropriety were made against us, which would impair our ability to win awards of contracts in the future or receive renewals of existing contracts.

In addition, U.S. government agencies routinely audit and review their contractors' performance on contracts, cost structure, pricing practices and compliance with applicable laws, regulations and standards. They also review the adequacy of, and a contractor's compliance with, its internal control systems and policies, including the contractor's purchasing, property, estimating, compensation and management information systems. Such audits may result in adjustments to our contract costs, and any costs found to be improperly allocated will not be reimbursed. We have recorded contract revenues for the periods presented in this report based upon costs we expect to realize upon final audit; however, we do not know the outcome of any future audits and adjustments and, if future audit adjustments exceed our estimates, our results of operations could be adversely affected. Additionally, we may be required to enter into agreements and subcontracts with third parties, including suppliers, consultants and other third party contractors in order to satisfy our contractual obligations pursuant to our agreements with the U.S. government. Negotiating and entering into such arrangements can be time-consuming and we may not be able to reach agreement with such third parties. Any such agreement also has to be compliant with the terms of our government grants. Any delay or inability to enter into such arrangements or entering into such arrangements in a manner that is non-compliant with the terms of our grants, may result in violations of our contracts with the U.S. government.

Clinical trials for our product candidates are expensive and time consuming, may take longer than we expect or may not be completed at all, and their outcomes are uncertain.

We have completed a Phase Ib/II clinical trial for eteplirsen in the UK and announced results in October 2010, which were published in *The Lancet* in July 2011. We also initiated a U.S.-based Phase IIb trial in eteplirsen in August 2011 and expect to commence additional trials of eteplirsen and other product candidates in the future. Each of our clinical trials requires the investment of substantial planning, expense and time and the timing of the commencement, continuation and completion of these clinical trials may be subject to significant delays relating to various causes, including scheduling conflicts with participating clinicians and clinical institutions, difficulties in identifying and enrolling participants who meet trial eligibility criteria, failure of participants to complete the clinical trial, delay or failure to obtain IRB or other regulatory approval to conduct a clinical trial at a prospective site, unexpected adverse events and shortages of available drug supply. Participant enrollment is a function of many factors, including the size of the relevant population, the proximity of participants to clinical sites, the eligibility criteria for the trial, the existence of competing clinical trials and the availability of alternative or new treatments. We depend on medical institutions and clinical research organizations, or CROs, to conduct our clinical trials in compliance with Good Clinical Practice, or GCP, and to the extent they fail to enroll participants for our clinical trials, fail to conduct the study to GCP standards or are delayed for a significant time in the execution of our trials, including achieving full enrollment, we may be affected by increased costs, program delays or both, which may harm our business. In addition, we conduct clinical trials in foreign countries which may subject us to further delays and expenses as a result of increased drug shipment costs, additional regulatory requirements and the engagement of foreign CROs, as well as expose us to risks associated with less experienced clinical investigators who are unknown to the FDA, and different standards of medical care. Foreign currency transactions insofar as changes in the relative value of the U.S. dollar to the foreign currency where the trial is being conducted may impact our actual costs. In addition, for some programs (e.g., DMD and Ebola and Marburg infections) there are currently no approved drugs to compare against and an agreement about how to measure efficacy has yet to be reached with the FDA and then demonstrated.

Clinical trials must be conducted in accordance with FDA or other applicable foreign government guidelines and are subject to oversight by the FDA, other foreign governmental agencies and IRBs at the medical institutions where the clinical trials are conducted. In addition, clinical trials must be conducted with supplies of our product candidates produced under cGMP and other requirements in foreign countries, and may require large numbers of participants. The FDA or other foreign governmental agencies or we ourselves could delay, suspend or halt our clinical trials of a product candidate for numerous reasons, including:

- deficiencies in the trial design;

- deficiencies in the conduct of the clinical trial including failure to conduct the clinical trial in accordance with regulatory requirements or clinical protocols;
- deficiencies in the clinical trial operations or trial sites resulting in the imposition of a clinical hold;
- the product candidate may have unforeseen adverse side effects, including fatalities, or a determination may be made that a clinical trial presents unacceptable health risks;
- the time required to determine whether the product candidate is effective may be longer than expected;
- fatalities or other adverse events arising during a clinical trial that may not be related to clinical trial treatments;
- the product candidate may appear to be no more effective than current therapies;
- the quality or stability of the product candidate may fail to conform to acceptable standards;
- our inability to produce or obtain sufficient quantities of the product candidate to complete the trials;
- our inability to reach agreement on acceptable terms with prospective CROs and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- our inability to obtain IRB approval to conduct a clinical trial at a prospective site;
- our inability to obtain regulatory approval to conduct a clinical trial;
- lack of adequate funding to continue the clinical trial, including the occurrence of unforeseen costs due to enrollment delays, requirements to conduct additional trials and studies and increased expenses associated with the services of our CROs and other third parties;
- our inability to recruit and enroll individuals to participate in clinical trials for reasons including competition from other clinical trial programs for the same or similar indications; or
- our inability to retain participants who have initiated a clinical trial but may be prone to withdraw due to side effects from the therapy, lack of efficacy or personal issues, or who are lost to further follow-up.

In addition, we may experience significant setbacks in advanced clinical trials, even after promising results in earlier trials, such as unexpected adverse events that occur when our product candidates are combined with other therapies and drugs or given to larger populations, which often occur in later-stage clinical trials. In addition, clinical results are frequently susceptible to varying interpretations that may delay, limit or prevent regulatory approvals. Also, patient advocacy groups and parents of trial participants may demand additional clinical trials or continued access to drug even if our interpretation of clinical results received thus far leads us to determine that additional clinical trials or continued access are unwarranted. Any disagreement with patient advocacy groups or parents of trial participants may require management's time and attention and may result in legal proceedings being instituted against us, which could be expensive, time-consuming and distracting, and may result in delay of the program. Negative or inconclusive results or adverse medical events, including participant fatalities that may be attributable to our product candidates, during a clinical trial may necessitate that it be redesigned, repeated or terminated. Further, some of our clinical trials may be overseen by an independent data safety monitoring board, or DSMB, and the DSMB may determine to delay or suspend one or more of these trials due to safety or futility findings based on events occurring during a clinical trial. Any such delay, suspension, termination or request to repeat or redesign a trial could increase our costs and prevent or significantly delay our ability to commercialize our product candidates.

We have incurred operating losses since our inception and we may not achieve or sustain profitability.

We had operating losses of $35.9 million for the year ended December 31, 2011 and $20.9 million for the year ended December 31, 2010. As of December 31, 2011, our accumulated deficit was $310.0 million. Our losses have resulted principally from expenses incurred in research and development of our technology and

products and from general and administrative expenses that we have incurred while building our business infrastructure. We expect to continue to incur significant operating losses in the future as we continue our research and development efforts and seek to obtain regulatory approval of our products. Our ability to achieve profitability depends on our ability to raise additional capital, partner one or more programs, complete development of our products, obtain regulatory approvals and market our products. It is uncertain when, if ever, we will become profitable.

We will need additional funds to conduct our planned research and development efforts. If we fail to continue to attract significant capital or fail to enter into strategic relationships, we may be unable to continue to develop our product candidates.

We will require additional capital from time to time in the future in order to continue the development of product candidates in our pipeline and to expand our product portfolio. The actual amount of funds that we will need will be determined by many factors, some of which are beyond our control. These factors include the success of our research and development efforts, the status of our preclinical and clinical testing, costs relating to securing regulatory approvals and the costs and timing of obtaining new patent rights, regulatory changes and competitive and technological developments in the market. An unforeseen change in these factors, or others, might increase our need for additional capital.

We would expect to seek additional financing from the sale and issuance of equity or equity-linked or debt securities, and we cannot predict that financing will be available when and as we need financing or that, if available, the financing terms will be commercially reasonable. If we are unable to obtain additional financing, when and if we require or on commercially reasonable terms, it would have a material adverse effect on our business and results of operations.

If we are able to consummate such financings, the trading price of our common stock could be adversely affected and/or the terms of such financings may adversely affect the interests of our existing shareholders. To the extent we issue additional equity securities, our existing shareholders could experience substantial dilution in their economic and voting rights. For example, in connection with our December 2007, January 2009, August 2009 and April 2011 financings, we sold an aggregate of 72.2 million shares of our common stock and issued warrants to purchase an additional 29.7 million shares of our common stock.

Further, we may also enter into relationships with pharmaceutical or biotechnology companies to perform research and development with respect to our RNA-based technologies, research programs or to conduct clinical trials and to market our product candidates. We currently do not have a strategic relationship with a third party to perform research or development using our RNA-based technologies or assist us in funding the continued development and commercialization of any of our programs or drug candidates other than that with the U.S. government. If we are unable to enter into partnerships or strategic relationships with respect to our technologies or any of our programs or drug candidates on favorable terms it may impede our ability to discover, develop and commercialize our product candidates.

We currently rely on third-party manufacturers and other third parties for production of our drug products and our dependence on these manufacturers may impair the advancement of our research and development programs and the development of our product candidates.

We do not currently have the internal ability to manufacture the product candidates that we need to conduct our clinical trials and we rely upon a limited number of manufacturers to supply our product candidates and the components of our drug substance. We may also need to rely on manufacturers for the production of our product candidates to support our research and development programs. In addition, we rely on other third parties to perform additional steps in the manufacturing process, including filling and labeling of vials and storage of our product candidates. For the foreseeable future, we expect to continue to rely on contract manufacturers and other third parties to produce, fill vials and store sufficient quantities of our product candidates for use in our research and development programs and clinical trials. For example, for our Ebola and Marburg hemorrhagic fever virus

development programs, we have entered into agreements with two multinational manufacturing firms for the production of the API for Ebola and Marburg therapeutics. There is a limited number of companies that can produce PMO in the quantities and with the quality and purity that we require for our development efforts. This might limit our ability to rapidly expand our programs or commercialize our products. If we are required to seek alternative supply arrangements, the resulting delays and potential inability to find suitable replacements or bring on-line new suppliers could materially and adversely impact our business.

Our product candidates require precise, high-quality manufacturing. The failure to achieve and maintain high quality standards, including failure to detect or control anticipated or unanticipated manufacturing errors could result in patient injury or death or product recalls. Contract drug manufacturers often encounter difficulties involving production yields, quality control and quality assurance and shortages of qualified personnel. If our contract manufacturers or other third parties fail to deliver our product candidates for our research and development programs and for clinical use on a timely basis, with sufficient quality, and at commercially reasonable prices, and we fail to find replacement manufacturers or to develop our own manufacturing capabilities, we may be required to delay or suspend clinical trials, research and development programs or otherwise discontinue development and production of our product candidates. In addition, we depend on outside vendors for the supply of raw materials used to produce our product candidates. If the third-party suppliers were to cease production or otherwise fail to supply us with quality raw materials and we are unable to contract on acceptable terms for these raw materials with alternative suppliers, our ability to have our product candidates manufactured and to conduct preclinical testing and clinical trials of our product candidates would be adversely affected.

We do not yet have all of the agreements necessary for the supply of our product candidates in quantities sufficient for commercial sale and we may not be able to establish or maintain sufficient commercial manufacturing arrangements on commercially reasonable terms. Securing commercial quantities of our product candidates from contract manufacturers will require us to commit significant capital and resources. We may also be required to enter into long-term manufacturing agreements that contain exclusivity provisions and/or substantial termination penalties. In addition, contract manufacturers have a limited number of facilities in which our product candidates can be produced and any interruption of the operation of those facilities due to events such as equipment malfunction or failure or damage to the facility by natural disasters could result in the cancellation of shipments, loss of product in the manufacturing process or a shortfall in available product candidates.

Our contract manufacturers are required to produce our clinical product candidates under current Good Manufacturing Practice, or cGMP, conditions in order to meet acceptable standards for our clinical trials. If such standards change, the ability of contract manufacturers to produce our product candidates on the schedule we require for our clinical trials may be affected. In addition, contract manufacturers may not perform their obligations under their agreements with us or may discontinue their business before the time required by us to successfully produce and market our product candidates. We and our contract manufacturers are subject to periodic unannounced inspection by the FDA and corresponding state and foreign authorities to ensure strict compliance with cGMP and other applicable government regulations and corresponding foreign standards. We do not have control over a third-party manufacturer's compliance with these regulations and standards. Any difficulties or delays in our contractors' manufacturing and supply of product candidates or any failure of our contractors to maintain compliance with the applicable regulations and standards could increase our costs, cause us to lose revenue, make us postpone or cancel clinical trials, prevent or delay regulatory approval by the FDA and corresponding state and foreign authorities, prevent the import and/or export of our product candidates, or cause our products to be recalled or withdrawn.

We may not be able to successfully scale-up manufacturing of our product candidates in sufficient quality and quantity, which would delay or prevent us from developing our product candidates and commercializing resulting approved drug products, if any.

To date, our product candidates have been manufactured in small quantities for preclinical studies and early stage clinical trials. In order to conduct larger or late-stage scale clinical trials for a product candidate and for

commercialization of the resulting drug product if that product candidate is approved for sale, we will need to manufacture it in larger quantities. We may not be able to successfully increase the manufacturing capacity for any of our product candidates, whether in collaboration with third-party manufacturers or on our own, in a timely or cost-effective manner or at all. If a contract manufacturer makes improvements in the manufacturing process for our product candidates, we may not own, or may have to share, the intellectual property rights to those improvements. Significant scale-up of manufacturing may require additional validation studies, which are costly and which the FDA must review and approve. In addition, quality issues may arise during those scale-up activities because of the inherent properties of a product candidate itself or of a product candidate in combination with other components added during the manufacturing and packaging process, or during shipping and storage of the finished product or active pharmaceutical ingredients. If we are unable to successfully scale-up manufacture of any of our product candidates in sufficient quality and quantity, the development of that product candidate and regulatory approval or commercial launch for any resulting drug products may be delayed or there may be a shortage in supply, which could significantly harm our business.

We rely on third parties to provide services in connection with our preclinical and clinical development programs. The inadequate performance by or loss of any of these service providers could affect our product candidate development.

Several third parties provide services in connection with our preclinical and clinical development programs, including in vitro and in vivo studies, assay and reagent development, immunohistochemistry, toxicology, pharmacokinetics, clinical assessments, data monitoring and management and statistical analysis and other outsourced activities. If these service providers do not adequately perform the services for which we have contracted or cease to continue operations and we are not able to quickly find a replacement provider or we lose information or items associated with our product candidates, our development programs may be delayed.

Our RNA-based, or antisense, technology has not been incorporated into a therapeutic commercial product and is still at a relatively early stage of development.

Our RNA-based platforms, utilizing proprietary PMO-based technology, have not been incorporated into a therapeutic commercial product and are still at a relatively early stage of development. This technology is used in all of our therapeutic candidates, including eteplirsen. We are conducting toxicology, pharmacology, pharmacokinetics and other preclinical studies and, although we have initiated Phase I clinical trials for AVI-6002, AVI-6003 (we will subsequently pursue development of AVI-7288, one of the two component oligomers in AVI-6003) and AVI-7100 and initiated a Phase IIb clinical trial in eteplirsen, additional preclinical studies may be required for these product candidates and before other product candidates enter human clinical trials. In addition, preclinical models to study participant toxicity and activity of compounds are not necessarily predictive of toxicity or efficacy of these compounds in the treatment of human disease and there may be substantially different results in clinical trials from the results obtained in preclinical studies. Any failures or setbacks in utilizing our PMO-based technology, including adverse effects resulting from the use of this technology in humans, could have a detrimental impact on our internal product candidate pipeline and our ability to maintain and/or enter into new corporate collaborations regarding these technologies, which would negatively affect our business and financial position.

If we fail to retain our key personnel or are unable to attract and retain additional qualified personnel, our future growth, ability to perform our U.S. government contracts and our ability to compete would suffer.

We are highly dependent on the efforts and abilities of the principal members of our senior management. Additionally, we have scientific personnel with significant and unique expertise in RNA-based therapeutics and related technologies and personnel with experience overseeing compliance with and execution of the terms of our U.S. government contracts. The loss of the services of any one of the principal members of our managerial, scientific or government contract compliance staff may prevent us from achieving our business objectives.

The competition for qualified personnel in the biotechnology field and for qualified personnel with government contracting experience is intense, and our future success depends upon our ability to attract, retain and motivate such personnel. In order to develop and commercialize our products successfully, we will be required to retain key managerial, scientific and government contract compliance staff. In certain instances, we may also need to expand our workforce and our management ranks. We face intense competition for qualified individuals from numerous pharmaceutical and biotechnology companies, as well as academic and other research institutions. If we are unable to attract, assimilate or retain such key personnel, our ability to advance our proprietary programs and perform our U.S. government contracts would be adversely affected. Any failure to perform under our U.S. government contracts could result in a termination of the agreement, which would harm our business.

We may engage in future acquisitions that increase our capital requirements, dilute our shareholders, cause us to incur debt or assume contingent liabilities and subject us to other risks.

We actively evaluate various strategic transactions on an ongoing basis, including licensing or acquiring complementary products, technologies or businesses. Any potential acquisitions may entail numerous risks, including increased operating expenses and cash requirements, assimilation of operations and products, retention of key employees, diversion of our management's attention and uncertainties in our ability to maintain key business relationships of the acquired entities. In addition, if we undertake acquisitions, we may issue dilutive securities, assume or incur debt obligations, incur large one-time expenses and acquire intangible assets that could result in significant future amortization expense.

Asserting, defending and maintaining our intellectual property rights could be challenging and costly, and our failure to do so could harm our ability to compete and impair the outcome of our operations. The pharmaceutical, biotechnology and academic environments are highly competitive and competing intellectual property could limit our ability to protect our products.

Our success will depend in significant part on our existing intellectually property rights and our ability to obtain additional patents and licenses in the future. As of February 29, 2012, we owned or controlled approximately 276 U.S. and corresponding foreign patents and 191 U.S. and corresponding foreign patent applications. We license patents from other parties for certain complementary technologies. We cannot be certain that pending patent applications will result in patents being issued in the United States or foreign countries. We cannot be certain that we were the first to make the inventions covered by any of our patents, if issued, or our pending patent applications. In addition, the patents that have been or will be issued may not afford meaningful protection for our technology and products. Competitors may develop products similar to ours that do not conflict with our patents. To protect our rights to any of our patents, if issued, and proprietary information, we may need to litigate against infringing third parties, or avail ourselves of the courts or participate in hearings to determine the scope and validity of those patents or other proprietary rights. These types of proceedings are often costly and could be very time-consuming to us, and we cannot assure you that the deciding authorities will rule in our favor. An unfavorable decision could allow third parties to use our technology without being required to pay us licensing fees or may compel us to license needed technologies to avoid infringing third-party patent and proprietary rights.

Pharmaceutical research and development is highly competitive; others may file patents first that cover our products or technology. For example, our competitor Prosensa has rights to European Patent No. EP 1619249. We opposed this patent in the Opposition Division of the European Patent Office, or the Opposition Division, and in November 2011, we announced that, although we succeeded in invalidating some of the patent's claims, the Opposition Division maintained in amended form certain claims of this patent relating to the treatment of DMD by skipping dystrophin exons 51 and 46. We and Prosensa both have the right to appeal this decision; however, pending final resolution of this matter and any appeal thereof, the patent at issue may provide the basis for Prosensa or other parties that have rights to such patent to assert that our drug eteplirsen infringes on such patent. A final resolution of this opposition proceeding may take a number of years and the outcome cannot be predicted or determined as of the date of this report. We are also aware of certain claims that have issued to

Prosensa in Japan that may provide the basis for Prosensa or other parties that have rights to these claims to assert that our drug eteplirsen infringes on such claims. We believe we have a basis to invalidate some or all of these claims and are evaluating the potential initiation of invalidation proceedings once these claims issue. Because we have not yet initiated an invalidation proceeding in Japan, the outcome and timing of such proceeding cannot be predicted or determined as of the date of this report. If we are unsuccessful in invalidating other of Prosensa's claims or if previously invalidated claims are restored on appeal, our ability to commercialize both eteplirsen and other therapeutic candidates for our pan-exon strategy could be materially impaired.

Our success will also depend partly on our ability to operate without infringing upon the proprietary rights of others as well as our ability to prevent others from infringing on our proprietary rights. We may be required at times to take legal action to protect our proprietary rights and, despite our best efforts, we may be sued for infringing on the patent rights of others. We have not received any communications or other indications from owners of related patents or others that such persons believe our products or technology may infringe on their patents. Patent litigation can involve complex factual and legal questions and its outcome is uncertain. Patent litigation is costly and, even if we prevail, the cost of such litigation could adversely affect our financial condition. If we do not prevail, in addition to any damages we might have to pay, we could be required to stop the infringing activity or obtain a license. If any patent related to our products or technology issues, and if our activities are determined to be covered by such a patent, we cannot assure you that we will be able to obtain or maintain a license, which could have a material adverse effect on our business, financial condition, ability to sell our products, operating results and ability to obtain and/or maintain our strategic business relationships.

Others may challenge our patents and, as a result, our patents could be narrowed or invalidated. The patent position of pharmaceutical and biotechnology firms, as well as academia, is generally highly uncertain, involves complex legal and factual questions, and has recently been the subject of much litigation. No consistent policy has emerged from the U.S. Patent and Trademark Office, or USPTO, or the courts regarding the breadth of claims allowed or the degree of protection afforded under biotechnology patents. In addition, there is a substantial backlog of pharmaceutical and biotechnology patent applications at the USPTO and the approval or rejection of patents may take several years.

To help protect our proprietary rights in unpatented proprietary information, trade secrets and know-how, we require our employees, consultants and advisors to execute confidentiality agreements and invention assignment agreements. However, such agreements may not provide us with adequate protection if confidential information is used or disclosed improperly. In addition, in some situations these agreements may conflict with, or be subject to, the rights of third parties with whom our employees, consultants or advisors have prior employment or consulting relationships. Further, others may independently develop substantially equivalent proprietary information and techniques, or otherwise gain access to our trade secrets.

Our research collaborators may publish data and information to which we have rights. If we cannot maintain the confidentiality of our technology and other confidential information in connection with our collaborations, then our ability to receive patent protection or protect our proprietary information may be impaired.

We face intense competition and rapid technological change, which may result in others discovering, developing or commercializing competing products before or more successfully than we do.

The biotechnology and pharmaceutical industries are highly competitive and subject to significant and rapid technological change. We are aware of many pharmaceutical and biotechnology companies that are actively engaged in research and development in areas related to antisense technology and other RNA technologies or that are developing alternative approaches to or therapeutics for the disease indications on which we are focused. Some of these competitors are developing or testing product candidates that now, or may in the future, compete directly with our product candidates. For example, we believe that companies including Alnylam Pharmaceuticals, Isis Pharmaceuticals, and Santaris share a focus on RNA-based drug discovery and development. Competitors with respect to our exon-skipping DMD program, or eteplirsen, include Prosensa and GlaxoSmithKline, or GSK, and other companies such as PTC Therapeutics and Summit plc have also been

working on DMD programs. Tekmira Pharmaceuticals Corp. has a drug candidate (TKM-Ebola) for the treatment of Ebola virus infection. Similar to AVI-6002, Tekmira's candidate has an open IND and is funded by the DoD. Tekmira initiated a Phase I clinical trial in February 2012. Tekmira's drug candidate may, or may not, prove to be safer or more efficacious or more responsive to warfighter needs than our product candidate. While Tekmira's development efforts are presently behind our development of AVI-6002, it is possible that Tekmira could gain marketing approval before our product candidate. Furthermore, if DoD funding is constrained, DoD may not be able to continue funding two competing products to treat the same disease.

Clinical trials evaluating the systemic administration of the Prosensa/GSK lead DMD drug candidate are currently ongoing, including a placebo-controlled global Phase III trial and two placebo-controlled Phase II trials, one based in the United States and one based outside the United States. The Prosensa/GSK drug candidate may, or may not, prove to be safer or more efficacious than our product candidate and it could gain marketing approval before our product candidate. This might affect our ability to successfully complete a clinical development program or market eteplirsen once approved. This competition may also extend to other exon-skipping drugs for DMD limiting our ability to gain market share.

Other potential competitors include large, fully integrated pharmaceutical companies and more established biotechnology companies that have significantly greater resources and expertise in research and development, manufacturing, testing, obtaining regulatory approvals and marketing. Also, academic institutions, government agencies and other public and private research organizations conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and marketing. It is possible that these competitors will succeed in developing technologies that are more effective than our product candidates or that would render our technology obsolete or noncompetitive. Our competitors may, among other things:

- develop safer or more effective products;
- implement more effective approaches to sales and marketing;
- develop less costly products;
- obtain quicker regulatory approval;
- have access to more manufacturing capacity;
- develop products that are more convenient and easier to administer;
- form more advantageous strategic alliances; or
- establish superior proprietary positions.

We may be subject to clinical trial claims and our insurance may not be adequate to cover damages.

We currently have no products that have been approved for commercial sale; however, the current and future use of our product candidates by us and our corporate collaborators in clinical trials, and the sale of any approved products in the future, may expose us to liability claims. These claims might be made directly by consumers or healthcare providers or indirectly by pharmaceutical companies, our corporate collaborators or others selling such products. We may experience financial losses in the future due to product liability claims. We have obtained limited general commercial liability insurance coverage for our clinical trials. We intend to expand our insurance coverage to include the sale of commercial products if we obtain marketing approval for any of our product candidates. However, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against all losses. If a successful product liability claim or series of claims is brought against us for uninsured liabilities or in excess of insured liabilities, our assets may not be sufficient to cover such claims and our business operations could be impaired.

Our operations involve the use of hazardous materials, and we must comply with environmental laws, which can be expensive, and may affect our business and operating results.

Our research and development activities involve the use of hazardous materials, including organic and inorganic solvents and reagents. Accordingly, we are subject to federal, state, and local laws and regulations

governing the use, storage, handling, manufacturing, exposure to, and disposal of these hazardous materials. In addition, we are subject to environmental, health and workplace safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens, and the handling of biohazardous materials. Although we believe that our activities conform in all material respects with such environmental laws, there can be no assurance that violations of these laws will not occur in the future as a result of human error, accident, equipment failure, or other causes. Liability under environmental, health and safety laws can be joint and several and without regard to fault or negligence. The failure to comply with past, present, or future laws could result in the imposition of substantial fines and penalties, remediation costs, property damage and personal injury claims, loss of permits or a cessation of operations, and any of these events could harm our business and financial conditions. We expect that our operations will be affected by other new environmental and health and workplace safety laws on an ongoing basis, and although we cannot predict the ultimate impact of any such new laws, they may impose greater compliance costs or result in increased risks or penalties, which could harm our business.

Risks Related to Our Common Stock

Our common stock may become ineligible for listing on The NASDAQ Stock Market, which would materially and adversely affect the liquidity and price of our common stock.

Our common stock is listed on The NASDAQ Global Market. The NASDAQ Global Market has several quantitative and qualitative requirements with which companies must comply in order to maintain this listing, including a $1.00 minimum bid price per share and $50 million minimum value of listed securities. On December 13, 2011, we received a letter from the listing qualifications department staff of The NASDAQ Stock Market, notifying us that for the previous 30 consecutive business days the bid price of our common stock had closed below $1.00 per share, the minimum closing bid price required by the continued listing requirements of NASDAQ set forth in Listing Rule 5450(a)(1). In order to regain compliance with this rule, by June 11, 2012, the closing bid price of our common stock must be at least $1.00 per share for a minimum of ten consecutive business days. On February 21, 2012, we received a letter from the listing qualifications department staff of The NASDAQ Stock Market that our common stock's closing bid price had been at or above $1.00 per share for 10 consecutive business days and, thus, we had regained compliance with Listing Rule 5450(a)(1). Although we have regained compliance with this listing rule, we could in the future be unable to meet The NASDAQ Global Market continued listing requirements. If we fail to maintain compliance with The NASDAQ Stock Market's listing standards, and our common stock becomes ineligible for listing on The NASDAQ Stock Market the liquidity and price of our common stock would be adversely affected.

If our common stock was delisted, the price of our stock and the ability of our shareholders to trade in our stock would be adversely affected. In addition, we would be subject to a number of restrictions regarding the registration of our stock under U.S. federal securities laws, and we would not be able to allow our employees to exercise their outstanding options, which could adversely affect our business and results of operations. If we are delisted in the future from The NASDAQ Stock Market, there may be other negative implications, including the potential loss of confidence by actual or potential collaboration partners, suppliers and employees and the loss of institutional investor interest in our company.

Our stock price is volatile and may fluctuate due to factors beyond our control.

The market prices for, and trading volumes of, securities of biotechnology companies, including our securities, have been historically volatile. The market has from time to time experienced significant price and volume fluctuations unrelated to the operating performance of particular companies. The market price of our common stock may fluctuate significantly due to a variety of factors, including:

- positive or negative results of testing and clinical trials by ourselves, strategic partners, or competitors;
- delays in entering into strategic relationships with respect to development and/or commercialization of our product candidates or entry into strategic relationships on terms that are not deemed to be favorable to our company;

- technological innovations or commercial product introductions by ourselves or competitors;
- changes in government regulations;
- developments concerning proprietary rights, including patents and litigation matters;
- public concern relating to the commercial value or safety of any of our products;
- financing, through the issuance of equity or equity linked securities or incurrence of debt, or other corporate transactions;
- comments by securities analysts;
- litigation;
- the perception that shares of our common stock may be delisted from The NASDAQ Stock Market; or
- general market conditions in our industry or in the economy as a whole.

In addition, the stock market has recently experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of individual companies. Broad market and industry factors may seriously affect the market price of companies' stock, including ours, regardless of actual operating performance. In addition, in the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instigated against these companies. Such litigation, if instigated against us, could result in substantial costs and a diversion of our management's attention and resources.

Provisions of our articles of incorporation, bylaws and Oregon corporate law might deter acquisition bids for us that might be considered favorable and prevent or frustrate any attempt to replace or remove the then current management and board of directors.

Certain provisions of our articles of incorporation and bylaws may make it more difficult for a third party to acquire control of us or effect a change in our board of directors and management. These provisions include:

- classification of our board of directors into two classes, with one class elected each year;
- prohibition of cumulative voting of shares in the election of directors;
- prohibition of shareholder actions by less than unanimous written consent;
- express authorization of the board of directors to make, alter or repeal our bylaws;
- advance notice requirements for nominations for election to our board or for proposing matters that can be acted upon by shareholders at shareholder meetings; and
- the ability of our board of directors to authorize the issuance of undesignated preferred stock, the terms and rights of which may be established and shares of which may be issued without shareholder approval, including rights superior to the rights of the holders of common stock.

In addition, the Oregon Control Share Act and Business Combination Act may limit parties that acquire a significant amount of voting shares from exercising control over us for specific periods of time. These provisions could discourage, delay or prevent a transaction involving a change of control, even if doing so would benefit our shareholders. These provisions also could discourage proxy contests and make it more difficult for shareholders to elect directors of their choosing or cause us to take other corporate actions, such as replacing or removing management or members of our board of directors.

We expect our quarterly operating results to fluctuate in future periods, which may adversely affect our stock price.

Our quarterly operating results have fluctuated in the past, and we believe they will continue to do so in the future. Some of these fluctuations may be more pronounced than they were in the past as a result of the issuance

of warrants to purchase 29.7 million shares of our common stock by us in December 2007 and January and August 2009. Each of these warrants is classified as a derivative liability. Accordingly, the fair value of the warrants is recorded on our consolidated balance sheet as a liability, and such fair value is adjusted at each financial reporting date with the adjustment to fair value reflected in our consolidated statement of operations. The fair value of the warrants is determined using the Black-Scholes option valuation model. Fluctuations in the assumptions and factors used in the Black-Scholes model can result in adjustments to the fair value of the warrants reflected on our balance sheet and, therefore, our statement of operations. Due to the classification of such warrants and other factors, quarterly results of operations are difficult to forecast, and period-to-period comparisons of our operating results may not be predictive of future performance. Additionally, our quarterly operating results may fluctuate due to the variable nature of our revenue and research and development expenses. Specifically, a change in the timing of activities performed in support of our U.S. government research contracts could either accelerate or defer anticipated revenue from period to period. Likewise, our research and development expenses may experience fluctuations as a result of the timing of activities performed in support of our U.S. government research contracts and the timing and magnitude of expenditures incurred in support of our DMD and other proprietary development programs. In one or more future quarters, our results of operations may fall below the expectations of securities analysts and investors. In that event, the market price of our common stock could decline. In addition, the market price of our common stock may fluctuate or decline regardless of our operating performance.

A significant number of shares of our common stock are issuable pursuant to outstanding options and warrants, and we expect to issue additional shares of common stock in the future. Sales of these shares will dilute the interests of other security holders and may depress the price of our common stock.

As of December 31, 2011, there were 135,743,120 shares of common stock outstanding, vested and expected to vest outstanding options to purchase 13,867,936 shares of common stock, and outstanding warrants to purchase 29,204,857 shares of common stock. Additionally, as of December 31, 2011, there were 12,284,538 shares of common stock available for future issuance under our 2011 Equity Incentive Plan. In addition, we may issue additional common stock and warrants from time to time to finance our operations. We may also issue additional shares to fund potential acquisitions or in connection with additional stock options or other equity awards granted to our employees, officers, directors and consultants under our 2011 Equity Incentive Plan. The issuance of additional shares of common stock or warrants to purchase common stock, perception that such issuances may occur, or exercise of outstanding warrants or options will have a dilutive impact on other shareholders and could have a material negative effect on the market price of our common stock.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

A description of the facilities we own and/or occupy is included in the following table. We believe that our current facilities are suitable and have sufficient capacity to meet the projected needs of our business for the next 12 months or that additional space is readily available. Except as noted below, all of our properties are currently being used in the operation of our business.

Location of Property	Square Footage	Lease Expiration Date	Purpose	Other Information
3450 Monte Villa Parkway, Suite 101, Bothell, WA 98021	19,108	November 2014	Laboratory and office space	Corporate headquarters
19909 120th Avenue NE, Suite 101, Bothell, WA 98011	8,398	December 2012	Office space	Administrative office
4575 SW Research Way, Suite 200, Corvallis, OR 97333	53,000	December 2020	Laboratory and office space	Primary laboratory
245 First Street, Riverview II, Suite 1800, Cambridge, MA 02142	1,058	July 2012*	Office space	Administrative office
1749 SW Airport Avenue, Corvallis, OR 97333	36,150	N/A – facility is owned; land lease expires February 2042	Acquired with intention of providing future expansion space for the manufacture of potential products and components; approximately 25,000 square feet currently are leased with the remaining space unoccupied	Property listed for sale in 2009; 25,000 square feet leased as of November 2011**

* Our offices in Cambridge are governed by the terms of service agreements, which do not create a tenancy interest, leasehold estate or other real property interest in our favor. In February 2012 office space increased to 1,474 square feet.

** In November 2011, the tenant, Perpetua Power Source Technologies, Inc., or Perpetua, agreed to lease approximately 25,000 square feet of the building until March 2017. Perpetua may terminate the lease at the end of the 36th month upon 180 days prior written notice, together with delivery of a termination fee. Perpetua has the option to extend the lease for an additional year if notice is provided no less than 12 months prior to the expiration date. Perpetua also has a right of first refusal relating to the lease of the remaining space at the building and was granted an option to purchase the building during the term of the lease, provided there is no uncured default by Perpetua at the time of exercise. If the purchase option is exercised, the price for the building is $2.0 million until February 2015, $2.1 from March 2015 until February 2016 and $2.2 million from March 2016 through the remainder of the initial lease term. If Perpetua exercises its extension option, the purchase price will be $2.3 million during the term of the extension.

Item 3. Legal Proceedings.

As of the date hereof, we are not a party to any material legal proceedings with respect to us, our subsidiaries, or any of our material properties. In the normal course of business, we may from time to time be named as a party to various legal claims, actions and complaints, including matters involving employment,

intellectual property, effects from the use of therapeutics utilizing our technology, or other topics. It is impossible to predict with certainty whether any resulting liability would have a material adverse effect on our financial position, results of operations or cash flows.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Market Information

Our Common Stock is quoted on The NASDAQ Global Market under the symbol "AVII." The following table sets forth the high and low sales prices as reported by The NASDAQ Global Market for each quarterly period in the two most recent years:

	High	Low
Year Ended December 31, 2010		
First Quarter	$ 1.80	$ 1.16
Second Quarter	1.88	1.11
Third Quarter	2.24	1.44
Fourth Quarter	2.20	1.72
Year Ended December 31, 2011		
First Quarter	$ 2.74	$ 1.71
Second Quarter	1.88	1.33
Third Quarter	1.70	1.02
Fourth Quarter	1.11	0.50

Holders

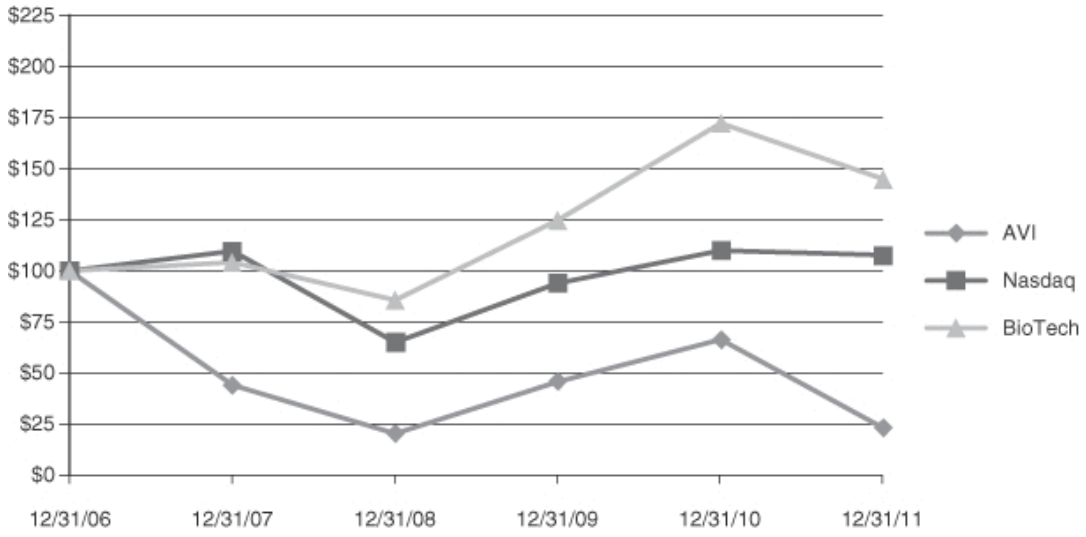
As of February 29, 2012, we had 582 shareholders of record of our common stock.

Dividends

We have neither declared nor paid cash dividends on our common stock in 2011 or 2010. We currently expect to retain future earnings, if any, to finance the operation and expansion of our business, and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors.

Performance Graph

The following graph compares the performance of our Common Stock for the periods indicated with the performance of the NASDAQ Composite Index and the Amex Biotech Index. This graph assumes an investment of $100 on December 31, 2006 in each of our common stock, the NASDAQ Composite Index and the Amex Biotech Index, and assumes reinvestment of dividends, if any. The stock price performance shown on the graph below is not necessarily indicative of future stock price performance.



	AVII	NASDAQ Composite Index	Amex Biotech Index
End of Fiscal 2006	100.00	100.00	100.00
End of Fiscal 2007	44.34	109.81	104.28
End of Fiscal 2008	20.75	65.29	85.80
End of Fiscal 2009	45.91	93.95	124.91
End of Fiscal 2010	66.67	109.84	172.04
End of Fiscal 2011	23.58	107.86	144.70

Recent Sales of Unregistered Securities.

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers.

None.

Item 6. Selected Financial Data.

The following selected financial data is derived from our audited financial statements and should be read in conjunction with, and is qualified in its entirety by, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operation," and Item 8, "Financial Statements and Supplementary Data."

	Year Ended December 31,				
	2011	2010	2009	2008	2007
	(in thousands)				
Operations data:					
Revenues	$ 46,990	$ 29,420	$ 17,585	$ 21,258	$ 10,985
Research and development	66,862	35,972	24,396	27,331	31,058
General and administrative	16,055	14,382	8,696	11,469	13,035
Acquired in-process research and development	—	—	—	9,916	—
Operating loss	(35,927)	(20,934)	(15,507)	(27,458)	(33,108)
Interest (expense) income, and other net	587	259	(454)	344	984
Gain (Loss) on change in warrant valuation	33,022	(11,502)	(9,198)	3,161	4,956
Net income (loss)	(2,318)	(32,177)	(25,159)	(23,953)	(27,168)
Net income (loss) per share—basic and diluted	$ (0.02)	$ (0.29)	$ (0.27)	$ (0.34)	$ (0.50)
Balance sheet data:					
Cash and cash equivalents	$ 39,904	$ 33,589	$ 48,446	$ 11,474	$ 25,074
Working capital	24,583	(8,019)	17,803	9,756	18,959
Total assets	54,368	45,976	60,027	25,536	38,638
Shareholders' equity (deficit)	31,017	(2,817)	23,630	15,732	26,382

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operation.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below, and those discussed in the section titled "Risk Factors" included elsewhere in this Annual Report on Form 10-K. Throughout this discussion, unless the context specifies or implies otherwise, the terms "AVI", "we", "us" and "our" refer to AVI BioPharma, Inc. and its subsidiaries.

Overview

We are a biopharmaceutical company focused on the discovery and development of unique RNA-based therapeutics for the treatment of rare and infectious diseases. Applying our proprietary, highly-differentiated and innovative platform technologies, we are able to target a broad range of diseases and disorders through distinct RNA-based mechanisms of action. We are primarily focused on rapidly advancing the development of our Duchenne muscular dystrophy drug candidates, including our lead product candidate, eteplirsen, which is currently in a Phase IIb trial. We are also focused on developing therapeutics for the treatment of infectious diseases and leveraging our RNA-based technology platforms to identify additional product candidates and explore various strategic opportunities.

Our lead program focuses on the development of disease-modifying therapeutic candidates for Duchenne muscular dystrophy, or DMD, a rare genetic muscle-wasting disease caused by the absence of dystrophin, a protein necessary for muscle function. Eteplirsen is our lead therapeutic candidate for DMD. If we are successful in our development efforts, eteplirsen will address a severe unmet medical need. Data from 17 of the 19 individuals enrolled in our Phase Ib/IIa trial in the United Kingdom who were treated systemically with eteplirsen demonstrated some generation of novel dystrophin, and one participant exhibited the first ever reported increase in dystrophin positive muscle fibers to 55% of normal. Restoration of dystrophin expression and dystrophin positive fibers is believed to be critical for successful disease-modifying treatment of individuals with DMD. We initiated a Phase IIb trial for eteplirsen in August 2011 with an objective of initiating a pivotal trial by the end of 2012. We anticipate releasing results from our current Phase IIb trial by the end of April 2012.

We are also leveraging the capabilities of our RNA-based technology platforms to develop therapeutics for the treatment of infectious diseases. The U.S. Department of Defense, or DoD, has provided significant financial support for the development of therapeutics against Ebola, Marburg, Dengue and influenza viruses, as described in greater detail below.

The basis for our novel RNA-based therapeutics is our phosphorodiamidate-linked morpholino oligomer, or PMO, chemistries. Unlike other RNA-based therapeutics, which are often used to down-regulate gene expression, our technologies can be used to selectively up-regulate or down-regulate the production of a target protein, or direct the expression of novel proteins involved in human diseases and disorders. We believe that these broad capabilities represent highly competitive RNA-based technology platforms and a strong intellectual property position, which we are leveraging to identify additional product candidates and explore various strategic opportunities. As of February 29, 2012, we owned or controlled approximately 276 U.S. and corresponding foreign patents and 191 U.S. and corresponding foreign patent applications.

Since our inception in 1980, we have incurred losses of approximately $310.0 million and substantially all of our revenue has been derived from research and development contracts with the U.S. government. We have not yet generated any material revenue from product sales and we have incurred expenses related to research and development, general and administrative charges and acquired in-process research and development resulting from two acquisitions. We expect to continue to incur losses in the future as we continue our research and development efforts and seek approval from various regulatory agencies for our product candidates, but there can be no assurance that we will obtain approval for our product candidates and achieve revenues from product sales.

In March 2008, we acquired all of the stock of Ercole Biotechnology, Inc., or Ercole, in exchange for 5,811,721 shares of our common stock, which was valued at approximately $8.4 million, and the assumption of approximately $1.8 million in liabilities of Ercole. We also issued warrants to purchase our common stock (also classified as equity), which were valued at $437,000, in exchange for certain outstanding warrants issued by Ercole.

In December 2011, we restructured our operations by reducing our workforce by 35 employees, or 28%. Restructuring charges totaling $1.1 million were recorded in 2011 and included severance and related costs. The charge included approximately $0.5 million to research and development expense and approximately $0.6 million to general and administrative expense. The restructuring was completed by January 31, 2012 and all severance costs are expected to be paid by July 31, 2012.

As of December 31, 2011, we had cash and cash equivalents of $39.9 million and we anticipate receiving continued funding from the U.S. government to pursue the development of our therapeutics against Ebola and Marburg. Combined together, we believe these sources provide us with sufficient cash to fund operations at least through the following 12 months. In addition, we are likely to pursue additional funding through public or private financings and cash generated from establishing collaborations or licensing our technology to other companies. Should our funding from the U.S. government cease or be delayed, it would have a significant negative impact on our financial condition and on this guidance and we would likely be forced to significantly curtail our research and development efforts.

The likelihood of our long-term success must be considered in light of the expenses, difficulties and delays frequently encountered in the development and commercialization of new pharmaceutical products, competitive factors in the marketplace, the risks associated with U.S. government sponsored programs, and the complex regulatory environment in which we operate. There can be no assurance that we will ever achieve significant revenues or profitable operations.

U.S. Government Contracts

In the periods presented, nearly all of the revenue we generated was derived from research contracts with and grants from the U.S. government. As of December 31, 2011, we had substantially completed all of our contracts with the U.S. government except for the July 2010 agreement for the development of therapeutics against Ebola and Marburg. Pursuant to this agreement, as of December 31, 2011, we are currently entitled to receive up to $126.5 million of which $52.7 million has been recognized as revenue. In addition, if the U.S. government elects to exercise all its options under the agreement, an additional $161.5 million in funding is available.

The following table sets forth the revenue from each of our contracts with the U.S. government and other revenue for the years ended December 31, 2011, 2010 and 2009.

	Year Ended December 31,		
	2011	2010	2009
	(in thousands)		
January 2006 Agreements (*Ebola and Marburg host factor, Dengue, Anthrax and Ricin*)	$ 9	$ 519	$ 2,288
November 2006 Agreement (*Ebola, Marburg and Junín Viruses*)	—	3,204	10,421
May 2009 Agreement (*H1N1*)	516	5,171	1,716
June 2010 Agreement (*H1N1*)	3,490	8,809	—
July 2010 Agreement (*Ebola and Marburg*)	42,875	9,822	—
Grants	—	1,622	725
Other Agreements	100	273	2,435
Total	$46,990	$29,420	$17,585

The following is a description of each of our significant U.S. government contracts and grants.

January 2006 Agreement (Ebola and Marburg Host Factors, Dengue, Anthrax and Ricin)

The 2006 defense appropriations included an allocation of $11.0 million to fund our ongoing defense-related programs under four different contracts, all of which were executed in 2007, and the last of which expired in October 2010. As of December 31, 2011, we have recognized revenue of $9.7 million with respect to these contracts and we do not expect to receive any additional revenue under these contracts.

November 2006 Agreement (Ebola, Marburg and Junín Viruses)

In November 2006, we entered into a two-year research contract with the U.S. Defense Threat Reduction Agency, or DTRA, which entitled us to $28.0 million to fund the development of our antisense therapeutic candidates against Ebola, Marburg and Junín hemorrhagic viruses. The contract was subsequently amended twice, which amendments extended the term of the contract to February 2011 and increased the award to an aggregate of $45.4 million. In November 2010, we and DTRA agreed that the key activities under this contract had been completed. As of December 31, 2011, we had recognized revenue of $38.4 million with respect to this contract and do not expect any further revenue.

May 2009 Agreement (H1N1/Influenza)

In May 2009, we entered into a contract with DTRA to develop swine flu drugs. Under this contract, DTRA was to pay us up to $4.1 million for the work involving the application of our proprietary PMO and PMO *plus*® antisense chemistry. In March 2010, the contract was amended to include testing against additional influenza strains and funding increased to an aggregate of $8.1 million. As of December 31, 2011, we have recognized revenue of $7.4 million with respect to this contract and we do not expect to receive additional revenue under this contract.

June 2010 Agreement (H1N1/Influenza)

On June 4, 2010, we entered into a contract with DTRA to advance the development of AVI-7100 as a medical countermeasure against the pandemic H1N1 influenza virus in cooperation with the Transformational Medical Technologies program, or TMT, of the U.S. Department of Defense, or DoD. The contract originally provided for funding of up to $18.0 million, but, pursuant to a subsequent modification, was decreased to $13.1 million. The period of performance for this contract ended on June 3, 2011 and, as of December 31, 2011, we have recognized revenue of $12.3 million and we do not expect to receive any additional revenue.

July 2010 Agreement (Ebola and Marburg)

On July 14, 2010, we were awarded a new contract with the DoD Chemical and Biological Defense Program through the U.S. Army Space and Missile Defense Command for the advanced development of our hemorrhagic fever virus therapeutic candidates, AVI-6002 and AVI-6003, against the Ebola and Marburg viruses, respectively. The contract is structured into four segments for each therapeutic candidate and has an aggregate period of performance spanning approximately six years if DoD exercises its options for all segments. Our activities under the first segment began in July 2010 and include Phase I studies in healthy volunteers as well as preclinical studies. In September 2011, the contract was amended to shift activities originally scheduled to occur during the second segment for each therapeutic candidate to the current funding period, which is scheduled to be completed in the second quarter of 2013. As a result of the amendment, the aggregate available funding for the current segments is approximately $126.5 million of which we have recognized $52.7 million to date.

After completion of the first segment, and each successive segment, DoD has the option to proceed to the next segment for either or both AVI-6002 and AVI-6003. If DoD exercises its options for all four segments for

both AVI-6002 and AVI-6003, our contract activities would include all clinical and licensure activities necessary to obtain FDA regulatory approval for each therapeutic candidate and would provide for a total funding award to us of up to $288.0 million over a period of six years, of which $161.5 million remains to be funded.

In February 2012, we announced that we received approval from the FDA to proceed with a single oligomer from AVI-6003, AVI-7288, as the lead product candidate against Marburg virus infection.

2010 Qualifying Therapeutic Discovery Project

In October 2010, we were awarded five cash grants for our DMD program and infectious disease programs totaling approximately $1.2 million under the U.S. government's Qualifying Therapeutic Discovery Project, or QTDP, and recognized the entire amount as revenue in 2010. We will not receive any further funding under the QTDP grants.

Key Financial Metrics

Revenue

Government Research Contract and Grant Revenue. Substantially all of our revenue is generated from U.S. government research contracts and grants. See "Note 7—U.S. Government Contracts" of the financial statements included elsewhere in this Annual Report on Form 10-K. We recognize revenue from U.S. government research contracts and grants during the period in which the related expenses are incurred and present such revenues and related expenses gross in the consolidated financial statements.

License Arrangements. Our license arrangements may consist of non-refundable upfront license fees, data transfer fees, research reimbursement payments, exclusive licensed rights to patented or patent pending compounds, technology access fees, various performance or sales milestones and future product royalty payments. Some of these arrangements are multiple element arrangements.

We defer recognition of non-refundable upfront fees if we have continuing performance obligations when the technology, right, product or service conveyed in conjunction with the non-refundable fee has no utility to the licensee that is separate and independent of our performance under the other elements of the arrangement. In addition, if we have continuing involvement through research and development services that are required because of our know-how or because the services can only be performed by us, then such up-front fees are deferred and recognized over the period of continuing involvement. As of December 31, 2011, we had deferred revenue of $3.3 million, which represents up-front fees which we will recognize as revenue as we satisfy the outstanding performance obligations.

Expenses

Research and Development. Research and development expense consists of costs associated with research activities as well as costs associated with our product development efforts, conducting preclinical studies, and clinical trial and manufacturing costs.

Direct research and development expenses associated with our programs include clinical trial site costs, clinical manufacturing costs, costs incurred for consultants and other outside services, such as data management and statistical analysis support, and materials and supplies used in support of the clinical programs. Indirect costs of our clinical program include salaries, stock based compensation, and an allocation of our facility costs.

The amount and timing of future research and development expense will depend on our ability to obtain U.S. government awards to fund the advanced development of our antiviral therapeutic candidates. Without such funding, we would likely drastically reduce our spending in these areas. Future research and development expenses may also increase if our internal projects, such as DMD, enter later stage clinical development. Our research and development programs are at an early stage and may not result in any approved products. Product candidates that appear promising at early stages of development may not reach the market for a variety of reasons. Similarly, any of our product candidates may be found to be ineffective during clinical trials, may take longer to complete clinical trials than we have anticipated, may fail to receive necessary regulatory approvals, or may prove impracticable to manufacture in commercial quantities at reasonable cost and with acceptable quality.

As a result of these uncertainties and the other risks inherent in the drug development process, we cannot determine the duration and completion costs of current or future clinical stages of any of our product candidates. Similarly, we cannot determine when, if, or to what extent we may generate revenue from the commercialization and sale of any product candidate. The timeframe for development of any product candidate, associated development costs, and the probability of regulatory and commercial success vary widely.

General and Administrative. General and administrative expense consists principally of salaries, benefits, stock-based compensation expense, and related costs for personnel in our executive, finance, legal, information technology, business development and human resource functions. Other general and administrative expenses include an allocation of our facility costs and professional fees for legal, consulting and accounting services.

Interest Income (Expense) and Other, Net. Interest income (expense) and other, net, consists of interest on our cash and cash equivalents, rental income and other income. Our cash equivalents consist of money market investments. Interest expense includes interest paid on our mortgage loan related to the Corvallis property, the substantial portion of which we leased in November 2011. Other income includes rental income from subleasing excess space in some of our facilities.

Change in Fair Value of Warrants. Warrants issued in connection with our December 2007 and January and August 2009 financings are classified as liabilities as opposed to equity due to their settlement terms. These warrants are non-cash liabilities; we are not required to expend any cash to settle these liabilities. The fair market value of these warrants was recorded on the balance sheet at issuance and the warrants are marked to market each financial reporting period, with changes in the fair value recorded as a gain or loss in our statement of operations. The fair value of the warrants is determined using the Black-Scholes option-pricing model, which requires the use of significant judgment and estimates related to the inputs used in the model and can result in significant swings in the fair market valuation primarily due to changes in our stock price. For more information, see “Note 9—Warrants” of the financial statements included elsewhere in this Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations are based upon our financial statements included elsewhere in this Annual Report on Form 10-K. The preparation of our financial statements in accordance with accounting principles generally accepted in the United States, or GAAP, requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities for the periods presented. Some of these judgments can be subjective and complex, and, consequently, actual results may differ from these estimates. For any given individual estimate or assumption we make, there may also be other estimates or assumptions that are reasonable. We believe that the estimates and judgments upon which we rely are reasonable based upon historical experience and information available to us at the time that we make these estimates and judgments. To the extent there are material differences between these estimates and actual results, our financial statements will be affected. Although we believe that our judgments and estimates are appropriate, actual results may differ from these estimates.

The policies that we believe are the most critical to aid the understanding of our financial results include:

- revenue recognition;
- stock-based compensation; and
- accounting for and valuation of warrants classified as liabilities.

Revenue Recognition

We have historically generated revenue from our U.S. government research contracts and grants and other license arrangements. For a more detailed description of our revenue recognition policies, see "—Key Financial Metrics" above and "Note 2—Summary of Significant Accounting Policies" of the financial statements included elsewhere in this Annual Report on Form 10-K.

Stock Compensation Expense

To determine stock-based compensation costs, we apply the provisions of Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 718, Share-Based Payments. We use the Black-Scholes option pricing model for determining the estimated fair value for stock-based awards on the date of grant, which requires the use of subjective and complex assumptions to determine the fair value of stock-based awards, including the option's expected term and the price volatility of the underlying stock. We recognize the value of the portion of the awards that is ultimately expected to vest as expense over the requisite vesting periods on a straight-line basis for the entire award. Stock options granted to employees are service-based and prior to December 31, 2010 typically vest over a three year period, with one-third of the underlying shares vesting on each anniversary of grant, and have a ten year term. Beginning in January 2011, newly granted stock options have a ten year term and typically vest over a four year period, with one fourth of the underlying shares vesting on the first anniversary of the grant and 1/48th of the underlying shares vesting monthly thereafter, such that the underlying shares will be fully vested on the fourth anniversary of the grant. Compensation expense of $3.1 million for the year ended December 31, 2011 is shown in the operating activities section of the statements of cash flows. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The following table summarizes the weighted average assumptions used in determining the fair value of stock options granted:

	Year Ended December 31,		
	2011	2010	2009
Risk-free interest rate	0.9% - 2.4%	1.4% - 3.8%	1.2% - 1.8%
Expected dividend yield	—%	—%	—%
Expected lives	5.2 - 8.9 years	5.3 - 8.0 years	3.6 - 9.1 years
Expected volatility	78.2% - 81.6%	82.5% - 90.3%	92.0% - 94.4%

The risk free interest rate is estimated using an average of treasury bill interest rates over a historical period commensurate with the expected life of the option that correlates to the prevailing interest rates at the time of grant. The expected dividend yield is zero as we have not paid any dividends to date and do not expect to pay dividends in the future. The expected lives are estimated using expected and historical exercise behavior. The expected volatility is estimated using calculated volatility of our common stock over a historical period commensurate with the expected life of the option. The amounts estimated according to the Black-Scholes option pricing model may not be indicative of the actual values realized upon the exercise of these options by the holders.

The assumptions used in calculating the fair value of stock-based compensation expense represent management's best estimates, but these 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 3—Stock Compensation" of the audited financial statements included elsewhere in this Annual Report on Form 10-K for a further discussion of stock-based compensation.

Warrant Liability

In December 2007 and January and August of 2009, we issued warrants to purchase an aggregate of 29.7 million shares of our common stock in connection with offerings of our common stock and warrants. These warrants are classified as a liability due to their settlement terms. These warrants are non-cash liabilities; we are not required to expend any cash to settle these liabilities.

The fair value of the warrants is recorded on our consolidated balance sheet as a liability, and such fair value is adjusted at each financial reporting period with the adjustment to fair value reflected in our consolidated statement of operations. The fair value of the warrants is determined using the Black-Scholes option pricing model, which requires the use of significant judgment and estimates related to the inputs used in the model. The following reflects the weighted-average assumptions for each of the periods indicated:

	Year Ended December 31,		
	2011	2010	2009
Risk-free interest rate	0.1% - 0.4%	0.6% - 1.0%	0.2% - 2.7%
Expected dividend yield	—%	—%	—%
Expected lives	1.0 - 2.7 years	2.0 - 3.7 years	0.4 - 4.7 years
Expected volatility	71.8% - 75.6%	84.7% - 90.1%	86.0% - 102.1%

Fluctuations in the assumptions and factors used in the Black-Scholes model can result in adjustments to the fair value of the warrants reflected on our balance sheet and, therefore, our statement of operations. If, for example, the market value of our common stock or its volatility at December 31, 2011 were 10% higher or lower than what we used in the valuation of the warrants, our valuation of the warrants would have increased by up to $1.0 million or decreased up to $1.0 million, respectively, with such difference reflected in our statement of operations. See "Note 9—Warrants" of the audited financial statements included elsewhere in this Annual Report on Form 10-K for a further discussion of warrants.

Results of Operations for the years ended December 31, 2011, 2010 and 2009

The following table sets forth selected consolidated statements of operations data for each of the periods indicated:

Summary of Results for Fiscal Years 2011, 2010 and 2009

	Year Ended December 31,		
	2011	2010	2009
	(in thousands, except per share amounts)		
Operations data:			
Revenues	$ 46,990	$ 29,420	$ 17,585
Research and development	66,862	35,972	24,396
General and administrative	16,055	14,382	8,696
Operating loss	(35,927)	(20,934)	(15,507)
Interest (expense) income, and other net	587	259	(454)
Gain (Loss) on change in warrant valuation	33,022	(11,502)	(9,198)
Net income (loss)	$ (2,318)	$ (32,177)	$ (25,159)
Net income (loss) per share - basic and diluted	$ (0.02)	$ (0.29)	$ (0.27)

Revenue

Revenue for 2011 increased by $17.6 million, or 60%, compared to 2010. The increase was primarily due to the 2010 Ebola and Marburg contract we received in July 2010, which contributed revenue of $42.9 million in 2011, an increase of $33.1 million over the prior year. This increase was partially offset by decreases in revenue on contracts we completed during 2011, including $10.0 million from the May 2009 and June 2010 H1N1 agreements, $1.2 million from the QTDP grants and a $3.7 million decrease for the 2006 Ebola, Marburg and Junín contracts.

Revenue for 2010 increased by $11.8 million, or 67%, compared to 2009 due to the increase from the Ebola and Marburg contract of $9.8 million, increases in revenue from the H1N1 contracts of $12.3 million, and an increase of $1.2 million from the QTDP grants. These increases were partially offset by a $9.1 million decrease in revenue from the 2006 Ebola, Marburg and Junín contract and a $2.4 million decrease in Children's National Medical Center contract related to DMD.

Research and Development Expenses

Research and development expenses for 2011 increased by $30.9 million, or 86%, compared to 2010 due primarily to a $22.8 million increase in costs related to the July 2010 Ebola and Marburg contract, a $6.4 million increase in costs for our proprietary DMD program that is in Phase II clinical trials, a $4.8 million increase for proprietary research and development and a $3.9 million increase from manufacturing activities. These increases were partially offset by a $5.0 million decrease in costs related to the H1N1 contracts completed in 2011 and a $2.0 million decrease related to the 2006 Ebola, Marburg and Junín contract, which was substantially completed in 2010.

Research and development expenses for 2010 increased by $11.6 million, or 47%, compared to 2009 due primarily to a $5.6 million increase in costs related to the July 2010 Ebola and Marburg contract and a $4.2 million increase in costs related to the June 2010 H1N1 government contract. Both of these contracts were new in 2010. Additionally, overall research and development spending increased by $4.6 million and expenditures on the 2009 H1N1 government contract increased $1.5 million. These increases were offset by a $4.3 million decline in spending related to the 2006 Ebola, Marburg and Junín contracts.

General and Administrative Expenses

General and administrative expenses for 2011 increased by $1.7 million, or 12%, compared to 2010. This increase was due primarily to an increase of $1.4 million in personnel related costs and $1.1 million in professional consulting costs. Legal fees and employee severance costs decreased by approximately $0.5 million each while facility costs also increased by $0.2 million.

General and administrative expenses for 2010 increased by $5.7 million, or 65%, compared to 2009. This significant increase in 2010 was due to $2.6 million in severance costs and stock compensation expense related to the departure in April 2010 of our former chief executive officer and an increase of $2.0 million in employee costs due to the July 2010 Ebola and Marburg contract and the H1N1 contracts. Other increases included legal costs of $0.9 million, facilities expense of $0.4 million for the addition of our new Bothell, Washington facilities, and a $0.4 million loss on the write down of the property held for sale. These increases were partially offset by a $0.6 million decrease in professional consulting costs.

Interest Income (Expense) and Other, Net

The increase in interest income (expense) and other, net for 2011 compared to 2010 was primarily due to increased interest income on invested cash.

The increase in interest income (expense) and other, net for 2010 compared to 2009 was attributable to increased interest income on invested cash of $0.1 million and $0.1 million from increased rental income from

the sublease of excess space in our Corvallis, Oregon facility. Additionally, these increases in income were offset by decreases of $0.5 million in patent abandonments and impairment of property held for sale that occurred in 2009.

Decrease (Increase) on Warrant Valuation

In 2011, we recognized $33.0 million of other income due to the reduction in the fair value of our outstanding warrants that are classified as liabilities on our consolidated balance sheet. In 2010, we recognized $11.5 million of other expense due to the increase in the fair value of the outstanding warrants on our consolidated balance sheet. The change in fair value of our warrant liability is primarily attributable to the change in our stock price.

Net Loss

The decrease in net loss of $29.9 million, or 93%, for 2011 compared to 2010 was primarily attributable to a $44.9 million increase in other income resulting from a decrease in the fair value of our outstanding warrants offset by an increase in operating loss of $15.0 million.

The increase in net loss of $7.0 million, or 28%, for 2010 compared to 2009 was primarily attributable to a $5.4 million increase in operating loss.

Liquidity and Capital Resources

At December 31, 2011, cash and cash equivalents were $39.9 million, compared to $33.6 million at December 31, 2010. Our principal sources of liquidity are revenue from our U.S. government research contracts and grants and equity financings. Our principal uses of cash are research and development expenses, general and administrative expenses and other working capital requirements. Based on the factors described below, we believe that our currently available cash and cash equivalents along with the anticipated receipt of future proceeds pursuant to the funded portion of our existing contracts with the U.S. government are sufficient to finance our operations for at least the next 12 months.

Sources of Funds

Our primary source of revenue is from development of product candidates pursuant to our contracts with the U.S. government. Government funding is subject to the U.S. government's appropriations process and the U.S. government has the right under our contracts with them to terminate such contracts for convenience. If U.S. government funding is not received or is delayed, our results of operations would be materially and adversely affected and we may need to seek additional sources of capital and significantly curtail our research and development activities. We do not generate any revenue from non-government, commercial sale of our pharmaceutical product candidates.

In January 2009, we sold approximately 14.2 million shares of our common stock and also issued warrants to purchase approximately 14.2 million shares of our common stock in an offering registered under the Securities Act of 1933, or the Securities Act. The offering generated net proceeds of approximately $15.5 million. The warrants issued to the investors in the offering have an exercise price of $1.16 per share and are exercisable at any time on or before July 30, 2014. In connection with the offering, we also issued to the placement agent a warrant to purchase approximately 427,000 shares of our common stock at an exercise price of $1.45 per share. The warrant issued to the placement agent is exercisable on or before January 30, 2014.

In August 2009, we sold approximately 24.3 million shares of our common stock and also issued warrants to purchase approximately 9.7 million shares of our common stock in an offering registered under the Securities Act. The offering generated net proceeds of approximately $32.3 million. The warrants issued to the investors in the offering have an exercise price of $1.78 per share and are exercisable at any time on or before August 25, 2014.

In April 2011, we sold 23.0 million shares of our common stock in an offering registered under the Securities Act. The offering generated net proceeds of $32.1 million.

We will require additional capital from time to time in the future in order to continue the development of products and to expand our product portfolio. We expect to seek additional financing primarily from, but not limited to, the sale and issuance of equity, or equity-linked or debt securities. We cannot assure you that financing will be available when and as needed or that, if available, the financings will be on favorable or acceptable terms. If we are unable to obtain additional financing when and if we require, it would have a material adverse effect on our business and results of operations. To the extent we issue additional equity securities, our existing shareholders could experience substantial dilution.

We have never generated material commercial revenue from the sale of our non-governmental products and cannot offer any assurances that we will be able to do so in the future.

Uses of Funds

From inception in 1980 through December 31, 2011, our accumulated deficit is $310.0 million. Our principal uses of cash have been research and development expenses, general and administrative expenses, costs associated with the acquisition of in-process research and development and other working capital requirements.

Historical Trends

	Year Ended December 31,		
	2011	2010	2009
		(in thousands)	
Cash provided by (used in):			
Operating activities	$(23,679)	$(15,209)	$ (8,800)
Investing activities	(2,305)	(1,961)	(1,883)
Financing activities	32,299	2,484	47,766
Increase (decrease) in cash and equivalents	$ 6,315	$(14,686)	$ 37,083

Operating Activities. We used $23.7 million of cash in operating activities for the year ended December 31, 2011, an increase of $8.5 million, or 56%, compared to $15.2 million of cash used in operating activities for the year ended December 31, 2010. The increase in net cash used in operating activities during the comparative periods was primarily attributable to a $14.7 million increased net loss, excluding the non-cash income associated with the periodic revaluation of the warrants to fair market value. This increased loss was primarily due to increased research and development costs, which were partially offset by higher revenue. Additionally, changes in accounts payable, accrued employee compensation and other liabilities offset net cash used in operating activities by $7.1 million in 2011.

We used $15.2 million of cash in operating activities for the year ended December 31, 2010, an increase of $6.4 million, or 73%, compared to $8.8 million of cash used in operating activities for the year ended December 31, 2009. The increase in net cash used in operating activities during the comparative periods was primarily attributable to increased research and development costs and higher general and administrative expenses, partially offset by higher revenue.

Investing Activities. We used $2.3 million of cash in investing activities for the year ended December 31, 2011, an increase of $0.3 million, or 18%, compared to $2.0 million of cash used in investing activities for the year ended December 31, 2010. The majority of the increase in cash used for investing activities was attributable to increased expenditures for patents and fixed assets.

We used $2.0 million of cash in investing activities for the year ended December 31, 2010, an increase of $0.1 million, or 4%, compared to $1.9 million of cash used in investing activities for the year ended December 31, 2009. The majority of the increase in cash used for investing activities was attributable to increased spending on fixed assets with no liquidation of a certificate of deposit in 2010 as occurred in 2009.

Financing Activities. We had financing activities for the year ended December 31, 2011 that provided $32.3 million, primarily from a stock offering that generated net proceeds of $32.1 million. The remainder of the funds provided was due to stock option and warrant exercises partially offset by debt repayments. For the year ended December 31, 2010, we had financing activities that provided $2.5 million through stock option and warrant exercises partially offset by debt repayments.

Our future expenditures and capital requirements depend on numerous factors, most of which are difficult to project beyond the short term. These requirements include our ability to meet the requirements of our U.S. government research projects, the progress of our research and development programs and our pre-clinical and clinical trials, the time and costs involved in obtaining regulatory approvals, the cost of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights, competing technological and market developments, our ability to establish collaborative arrangements and the terms of any such arrangements, and the costs associated with commercialization of our products. Our cash requirements are expected to continue to increase as we advance our research, development and commercialization programs and we are likely to seek additional financing during 2012.

Off-Balance Sheet Arrangements

During the periods presented, we did not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or for another contractually narrow or limited purpose.

Contractual Payment Obligations

In our continuing operations, we have entered into long-term contractual arrangements from time to time for our facilities, the provision of goods and services, and acquisition of technology access rights, among others. The following table presents contractual obligations arising from these arrangements as of December 31, 2011:

	Payments Due By Period				
Contractual Obligations	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(in thousands)				
Long-term debt	$ 1,842	$ 85	$ 182	$ 201	$ 1,374
Operating leases	15,971	2,536	4,070	2,869	6,496
Purchase Obligations(1)	2,925	2,925	—	—	—
	$ 20,738	$ 5,546	$4,252	$ 3,070	$ 7,870

(1) Purchase obligations include agreements to purchase goods or services that are enforceable and legally binding to the Company and that specify all significant terms. Purchase obligations relate primarily to our DMD development program.

Recent Accounting Pronouncements

See “Note 2—Summary of Significant Accounting Policies—Recent Accounting Pronouncements” of the financial statements included elsewhere in this Annual Report on Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We had cash and cash equivalents of $39.9 million and $33.6 million at December 31, 2011 and 2010, respectively. We do not enter into investments for trading or speculative purposes and our cash equivalents are invested in money market accounts. We believe that we do not have any material exposure to changes in the fair value of these assets in the near term due to extremely low rates of investment interest and to the short term nature of our cash and cash equivalents. Future declines in interest rates, however, would reduce investment income, but are not likely to be a material source of revenue to our company in the foreseeable future. A 0.1% decline in interest rates, occurring January 1, 2011 and sustained throughout the period ended December 31, 2011, would be inconsequential.

Item 8. Financial Statements and Supplementary Data.

The information required by this Item 8 begins on page F-1 in Item 15 of Part IV of this Annual Report on Form 10-K and is incorporated into this item by reference.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

We carried out an evaluation as of the end of the period covered by this Annual Report on Form 10-K, under the supervision and with the participation of our management, including our Principal Executive and Financial Officer, of the effectiveness of our disclosure controls and procedures pursuant to paragraph (b) of Rule 13a-15 and 15d-15 under the Exchange Act. Based on that review, the Principal Executive and Financial Officer has concluded that our disclosure controls and procedures are effective to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act (1) is recorded, processed, summarized, and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and (2) is accumulated and communicated to our management, including our Principal Executive and Principal Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

We do not expect that our disclosure controls and procedures will prevent all error and all fraud. A control procedure, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control procedure are met. Because of the inherent limitations in all control procedures, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. We considered these limitations during the development of our disclosure controls and procedures, and will continually reevaluate them to ensure they provide reasonable assurance that such controls and procedures are effective.

Internal Control over Financial Reporting

Management's Annual Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting for our company, as such term is defined in Rules 13a-15(f) and 15d-15(f) under 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, and includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of 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, 2011. In making this assessment, management used the criteria in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, management has concluded that, as of December 31, 2011, our internal control over financial reporting was effective.

The effectiveness of our internal control over financial reporting as of December 31, 2011 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report which appears in this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There have not been any changes in our internal control over financial reporting as defined in Rules 13a–15(f) and 15d–15(f) under the Exchange Act during the quarter ended December 31, 2011 that our certifying officers concluded materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders
AVI BioPharma, Inc:

We have audited AVI BioPharma, Inc.'s (a development stage company) internal control over financial reporting as of December 31, 2011, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). AVI BioPharma, Inc.'s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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.

In our opinion, AVI BioPharma, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2011, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the balance sheets of AVI BioPharma, Inc. (a development stage company) as of December 31, 2011 and 2010, and the related statements of operations, shareholders' equity (deficit) and comprehensive income (loss), and cash flows for each of the years in the three-year period ended December 31, 2011 and the information included in the cumulative from inception presentations for the period January 1, 2002 to December 31, 2011 (not separately presented herein), and our report dated March 13, 2012 expressed an unqualified opinion on those financial statements. The financial statements of AVI BioPharma, Inc. for the period July 22, 1980 (inception) to December 31, 2001 were audited by other auditors who have ceased operations. Those auditors expressed an unqualified opinion on those financial statements in their report dated February 21, 2002.

/s/ KPMG LLP

Seattle, Washington
March 13, 2012

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information regarding our directors and executive officers required by this item will be included in either an amendment to this Annual Report on Form 10-K or in our definitive proxy statement for our 2012 annual meeting of shareholders to be filed with the Commission not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K and is incorporated herein by reference.

Item 11. Executive Compensation.

The information required by this item will be included in either an amendment to this Annual Report on Form 10-K or in our definitive proxy statement for our 2012 annual meeting of shareholders to be filed with the Commission not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K and is incorporated herein by reference.

Item 12. SecurityOwnership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item will be included in either an amendment to this Annual Report on Form 10-K or in our definitive proxy statement for our 2012 annual meeting of shareholders to be filed with the Commission not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item will be included in either an amendment to this Annual Report on Form 10-K or in our definitive proxy statement for our 2012 annual meeting of shareholders to be filed with the Commission not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

The information required by this item will be included in either an amendment to this Annual Report on Form 10-K or in our definitive proxy statement for our 2012 annual meeting of shareholders to be filed with the Commission not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Financial Statements

The following financial statements of the Company and the Report of KPMG LLP, Independent Registered Public Accounting Firm, are included in Part IV of this Annual Report on Form 10-K on the pages indicated:

(2) Financial Statement Schedules

All schedules are omitted because they are not applicable or the required information is shown in the financial statements or the notes thereto.

(3) Exhibits

The exhibits required by Item 601 of Regulation S-K are listed in paragraph (b) below.

(b) Exhibits.

The following exhibits are filed herewith or are incorporated by reference to exhibits previously filed with the SEC:

Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
2.1	Agreement and Plan of Merger dated March 12, 2008 by and among AVI BioPharma, Inc., EB Acquisition Corp., Ercole Biotech, Inc. and the Stockholder Representative.	8-K	001-14895	2.1	3/13/08	
3.1	Fourth Restated and Amended Articles of Incorporation of AVI BioPharma, Inc.	S-8	333-175031	4.1	6/20/11	
3.2	Amended and Restated Bylaws of AVI BioPharma, Inc.	10-K	001-14895	3.4	3/15/11	
4.1	Form of Specimen Certificate for Common Stock.	10-K	001-14895	4.1	3/15/11	
4.2	Form of Warrant to Purchase Common Stock, issued on December 19, 2007.	8-K	001-14895	4.5	12/13/07	
4.3	Form of Common Stock Purchase Warrant, issued on January 30, 2009.	8-K	001-14895	4.4	1/30/09	

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Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.4	Form of Common Stock Purchase Warrant, issued on August 25, 2009.	8-K	001-14895	4.1	8/24/09	
10.1†	Employment Agreement with Patrick Iversen, Ph.D., dated July 14, 1997.	10KSB	000-22613	10.12	3/30/98	
10.2†	Amendment to Employment Agreement with Patrick Iversen, Ph.D., dated December 28, 2008.	10-K	001-14895	10.5	3/15/11	
10.3†	Amendment No. 2 to Employment Agreement with Patrick Iversen, Ph.D., dated January 18, 2010.	10-K	001-14895	10.6	3/15/11	
10.4†	Employment Agreement dated February 8, 2008 by and between AVI BioPharma, Inc. and Leslie Hudson, Ph.D.	10-Q	001-14895	10.63	5/12/08	
10.5†	Executive Employment Agreement dated December 17, 2010 by and between AVI BioPharma, Inc. and Christopher Garabedian.	10-K	001-14895	10.17	3/15/11	
10.6†	Executive Employment Agreement dated January 10, 2011 by and between AVI BioPharma, Inc. and Effie Toshav.	10-Q	001-14895	10.1	5/10/11	
10.7†	Executive Employment Agreement dated March 29, 2011 by and between AVI BioPharma, Inc. and Peter S. Linsley, Ph.D.	10-Q	001-14895	10.4	5/10/11	
10.8†	Executive Employment Agreement dated June 13, 2011 by and between AVI BioPharma, Inc. and Edward Kaye, M.D.	10-Q	001-14895	10.4	8/8/11	
10.9†	Stand Alone Stock Option Grant between AVI BioPharma, Inc. and Effie Toshav dated January 10, 2011.	10-Q	001-14895	10.2	5/10/11	
10.10†	Stand Alone Stock Option Grant between the Registrant and Peter Linsley dated May 16, 2011.	S-8	333-175031	4.8	6/20/11	
10.11†	Stand Alone Stock Option Grant between the Registrant and Edward Kaye dated June 20, 2011.	S-8	333-175031	4.9	6/20/11	
10.12†	Separation and Release Agreement dated April 20, 2010 between Leslie Hudson and AVI BioPharma, Inc.	8-K	001-14895	10.2	4/22/10	
10.13†	Separation and Release Agreement effective June 9, 2011 between Paul Medeiros and AVI BioPharma, Inc.	10-Q	001-14895	10.3	8/8/11	

Exhibit Number	Description	Incorporated by Reference to Filings Indicated				
		Form	File No.	Exhibit	Filing Date	Filed Herewith
10.14†	Separation Agreement and Release effective July 30, 2011 between J. David Boyle II and AVI BioPharma, Inc.	10-Q	001-14895	10.1	11/8/11	
10.15†	Separation and Release Agreement effective August 9, 2011 between Stephen Bevan Shrewsbury, M.D. and AVI BioPharma, Inc.	10-Q	001-14895	10.2	11/8/11	
10.16†	AVI BioPharma, Inc. 2002 Equity Incentive Plan.	Schedule 14A	001-14895	Appendix A	4/11/02	
10.17†	AVI BioPharma, Inc. 2011 Equity Incentive Plan.	8-K	001-14895	10.1	6/16/11	
10.18†	Form of Stock Option Award Agreement under the 2011 Equity Incentive Plan.	8-K	001-14895	10.2	6/16/11	
10.19†	Form of Notice of Grant of Restricted Stock under the 2011 Equity Incentive Plan.	8-K	001-14895	10.3	6/16/11	
10.20†	AVI BioPharma, Inc. Non-Employee Director Compensation Policy.	8-K	001-14895	10.85	10/1/10	
10.21†	Form of Indemnification Agreement.	8-K	001-14895	10.86	10/8/10	
10.22*	Collaboration and License Agreement between Isis Pharmaceuticals and Ercole Biotech, Inc. dated May 16, 2003.	10-K	001-14895	10.78	3/16/10	
10.23	Exclusive License Agreement by and between The University of Western Australia and AVI BioPharma, Inc., dated November 24, 2008.	10-K	001-14895	10.36	3/15/11	
10.24	Agreement between AVI BioPharma, Inc. and the U.S. Defense Threat Reduction Agency dated May 5, 2009.	10-Q	001-14895	10.72	8/10/09	
10.25	Amendment of Contract between AVI BioPharma, Inc. and the U.S. Defense Threat Reduction Agency (contract no. HDTRA1-07-C-0010), effective May 29, 2009.	10-Q	001-14895	10.74	8/10/09	
10.26	Amendment of Contract between AVI BioPharma, Inc. and the U.S. Defense Threat Reduction Agency (contract no. HDTRA 1-07-C0010), effective September 30, 2009.	10-Q	001-14895	10.77	11/9/09	

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Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.27*	Amendment of Contract between AVI BioPharma, Inc. and the U.S. Defense Threat Reduction Agency (contract no HDTRA 1-09-C-0046), effective March 25, 2010.	10-Q	001-14895	10.81	5/10/10	
10.28*	Contract Number HDTRA1-10-C-0079 between Defense Threat Reduction Agency and AVI BioPharma, Inc. dated June 4, 2010.	10-Q	001-14895	10.84	8/9/10	
10.29*	Modification No. PZ0001 to Contract Number HDTRA1-10-C-0079 between Defense Threat Reduction Agency and AVI BioPharma, Inc. effective March 3, 2011.	10-Q	001-14895	10.3	5/10/11	
10.30*	Modification No. P00005 to Contract Number HDTRA1-10-C-0079 between Defense Threat Reduction Agency and AVI BioPharma, Inc. effective April 13, 2011.	10-Q	001-14895	10.1	8/8/11	
10.31*	Contract Number W9113M-10-C-0056 between U.S. Army Space and Missile Defense Command and AVI BioPharma, Inc. dated July 14, 2010.	10-Q	001-14895	10.86	11/9/10	
10.32*	Modification No. P00005 to Contract Number W9113M-10-C-0056 between U.S. Army Space and Missile Defense Command and AVI BioPharma, Inc. effective August 15, 2011.	10-Q/A	001-14895	10.3	2/15/12	
10.33*	Sponsored Research Agreement between AVI BioPharma, Inc. and Charley's Fund, Inc., effective October 12, 2007.	10-K	001-14895	10.58	3/17/08	
10.34*	First Amendment to Sponsored Research Agreement between AVI BioPharma, Inc. and Charley's Fund, Inc. dated June 2, 2009.	10-Q	001-14895	10.75	8/10/09	
10.35	Shareholder's Trust Agreement between and among AVI BioPharma, Inc., AVI Shareholder Advocacy Trust, The Shareholder Advocate LLC, and Richard Macary, dated October 29, 2007.	10-K	001-14895	10.59	3/17/08	
10.36	Securities Purchase Agreement dated January 29, 2009 between AVI BioPharma, Inc. and the Purchasers identified on the signature pages thereto.	8-K	001-14895	10.67	1/30/09	
10.37†	Letter Agreement Regarding Board of Director Representation dated January 29, 2009 between AVI BioPharma, Inc. and Eastbourne Capital Management, LLC.	8-K	001-14895	10.68	1/30/09	

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Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.38	Commercial Lease between Research Way Investments, Landlord, and Antivirals, Inc., Tenant, effective June 15, 1992.	SB-2	333-20513	10.9	1/28/97	
10.39	Lease Extension and Modification Agreement dated September 1, 1996, by and between Research Way Investments and Antivirals, Inc.	10-K	001-14895	10.53	3/15/11	
10.40	Second Lease Extension and Modification Agreement dated January 24, 2006 by and between Research Way Investments and AVI BioPharma, Inc.	10-Q	001-14895	10.55	8/9/06	
10.41	Real Property Purchase Agreement by and between WKL Investments Airport, LLC and AVI BioPharma, Inc., dated March 1, 2007, as amended.	10-Q	001-14895	10.61	8/9/07	
10.42	Lease Agreement between AVI BioPharma, Inc. and Perpetua Power Source Technologies, Inc., dated November 23, 2011.					X
10.43	First Amendment to Lease Agreement dated December 22, 2011 between AVI BioPharma, Inc. and Perpetua Power Source Technologies, Inc.					X
10.44	Second Amendment to Lease Agreement dated January 20, 2012 between AVI BioPharma, Inc. and Perpetua Power Source Technologies, Inc.					X
10.45	Lease dated July 27, 2009 by and between BMR-3450 Monte Villa Parkway, LLC and AVI BioPharma, Inc.	10-Q	001-14895	10.76	11/9/09	
10.46	First Amendment to Lease dated August 30, 2011 by and between BMR-3450 Monte Villa Parkway LLC and AVI BioPharma, Inc.	10-Q	001-14895	10.4	11/8/11	
10.47	Second Amendment to Lease dated January 31, 2012 by and between BMR-3450 Monte Villa Parkway LLC and AVI BioPharma, Inc.					X
10.48	Lease dated October 20, 2010, by and between S/I North Creek VII LLC and AVI BioPharma, Inc.	10-K	001-14895	10.57	3/15/11	
10.49	Settlement Agreement dated April 20, 2010 among AVI BioPharma, Inc. and the Shareholder Group (as defined therein).	8-K	001-14895	10.1	4/22/10	
21.1	Subsidiaries of the Registrant.	10-K	001-14895	21.1	3/16/10	

Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
23.1	Consent of Independent Registered Public Accounting Firm.					X
24.1	Power of Attorney (contained on signature page).					X
31.1	Certification of the Company's President and Chief Executive Officer, Christopher Garabedian, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of the Company's Vice President, Finance, Michael Jacobsen, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1**	Certification of the Company's President and Chief Executive Officer, Christopher Garabedian, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2**	Certification of the Company's Vice President, Finance, Michael Jacobsen, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101.INS***	XBRL Instance Document.					X
101.SCH***	XBRL Taxonomy Extension Schema Document.					X
101.CAL***	XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.DEF***	XBRL Taxonomy Extension Definition Linkbase Document.					X
101.LAB***	XBRL Taxonomy Extension Label Linkbase Document.					X
101.PRE***	XBRL Taxonomy Extension Presentation Linkbase Document.					X

* Confidential treatment has been granted for portions of this exhibit.

** Furnished herewith.

*** In accordance with Rule 406T of Regulation S-T, the information in these exhibits is furnished and deemed not filed or a part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of Section 18 of the Exchange Act of 1934, and otherwise is not subject to liability under these sections and shall not be incorporated by reference into any registration statement or other document filed under the Securities Act of 1933, as amended, except as expressly set forth by specific reference in such filing.

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

(c) Financial Statement Schedules.

All schedules are omitted because they are not applicable or the required information is shown in the financial statements or the notes thereto.

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SIGNATURES

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

Dated: March 13, 2012

AVI BIOPHARMA, INC.

By: /s/ Christopher Garabedian
Christopher Garabedian
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Christopher Garabedian and Michael A. Jacobsen, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file, any and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their and his or her substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on March 13, 2012:

Signature	Title
/s/ Christopher Garabedian Christopher Garabedian	President, Chief Executive Officer and Director (Principal Executive and Financial Officer)
/s/ Michael A. Jacobsen Michael A. Jacobsen	Vice President, Finance (Principal Accounting Officer)
/s/ William Goolsbee William Goolsbee	Chairman of the Board
/s/ M. Kathleen Behrens M. Kathleen Behrens, Ph.D.	Director
/s/ Anthony Chase Anthony Chase	Director
/s/ John C. Hodgman John C. Hodgman	Director
/s/ Gil Price Gil Price, M.D.	Director
/s/ Hans Wigzell Hans Wigzell, M.D., Ph.D.	Director

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders
AVI BioPharma, Inc:

We have audited the accompanying balance sheets of AVI BioPharma, Inc. (a development stage company) as of December 31, 2011 and 2010, and the related statements of operations, shareholders' equity (deficit) and comprehensive income (loss), and cash flows for each of the years in the three-year period ended December 31, 2011 and the information included in the cumulative from inception presentations for the period January 1, 2002 to December 31, 2011 (not separately presented herein). These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. The financial statements of AVI BioPharma, Inc. for the period July 22, 1980 (inception) to December 31, 2001 were audited by other auditors who have ceased operations. Those auditors expressed an unqualified opinion on those financial statements in their report dated February 21, 2002.

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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of AVI BioPharma, Inc. (a development stage company) as of December 31, 2011 and 2010, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2011 and the information included in the cumulative from inception presentations for the period January 1, 2002 to December 31, 2011 (not separately presented herein), in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of AVI BioPharma, Inc.'s internal control over financial reporting as of December 31, 2011, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report, dated March 13, 2012 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

Seattle, Washington

March 13, 2012

THIS REPORT IS A CONFORMED COPY OF THE REPORT PREVIOUSLY ISSUED BY ARTHUR ANDERSEN LLP AND HAS NOT BEEN REISSUED BY THAT FIRM.

Report of Arthur Andersen, Independent Public Accountants

Report of Independent Public Accountants

To the Board of Directors and Shareholders of AVI BioPharma, Inc.

We have audited the accompanying balance sheet of AVI BioPharma, Inc. (an Oregon corporation in the development stage) as of December 31, 2001, and the related statements of operations, shareholders' equity and cash flows for each of the two years in the period ended December 31, 2001 and for the period from inception (July 22, 1980) to December 31, 2001. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of AVI BioPharma, Inc. as of December 31, 2001, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2001 and for the period from inception (July 22, 1980) to December 31, 2001, in conformity with accounting principles generally accepted in the United States.

/s/ Arthur Andersen LLP

Portland, Oregon
February 21, 2002

AVI BioPharma, Inc.
(A Development Stage Company)
Balance Sheets
(in thousands, except share data)

	December 31, 2011	December 31, 2010
Assets		
Current Assets:		
Cash and cash equivalents	$ 39,904	$ 33,589
Accounts receivable	3,633	3,224
Other current assets	1,647	1,025
Total Current Assets	45,184	37,838
Property held for sale	—	1,965
Property and Equipment, net of accumulated depreciation and amortization of $15,765 and $14,963	4,265	2,070
Patent Costs, net of accumulated amortization of $2,199 and $1,742	4,764	3,980
Other assets	155	123
Total Assets	$ 54,368	$ 45,976
Liabilities and Shareholders' Equity (Deficit)		
Current Liabilities:		
Accounts payable	$ 9,396	$ 1,311
Accrued employee compensation	2,244	2,015
Long-term debt, current portion	85	81
Warrant valuation	5,446	39,111
Deferred revenue	3,304	3,304
Other liabilities	126	35
Total Current Liabilities	20,601	45,857
Commitments and Contingencies		
Long-term debt, non-current portion	1,757	1,842
Other long-term liabilities	993	1,094
Shareholders' Equity (Deficit):		
Preferred stock, $.0001 par value, 20,000,000 shares authorized; none issued and outstanding	—	—
Common stock, $.0001 par value, 300,000,000 and 200,000,000 shares authorized; 135,743,120 and 112,352,452 issued and outstanding	13	11
Additional paid-in capital	340,968	304,818
Deficit accumulated during the development stage	(309,964)	(307,646)
Total Shareholders' Equity (Deficit)	31,017	(2,817)
Total Liabilities and Shareholders' Equity (Deficit)	$ 54,368	$ 45,976

See accompanying notes to financial statements.

AVI BioPharma, Inc.
(A Development Stage Company)

Statements of Operations

(in thousands, except per share data)

	Year ended December 31,			July 22, 1980 (Inception) through December 31,
	2011	2010	2009	2011
Revenues from license fees, grants and research contracts	$ 46,990	$ 29,420	$ 17,585	$ 136,219
Operating expenses:				
Research and development	66,862	35,972	24,396	333,266
General and administrative	16,055	14,382	8,696	104,457
Acquired in-process research and development	—	—	—	29,461
Operating loss	(35,927)	(20,934)	(15,507)	(330,965)
Other non-operating (loss) income:				
Interest (expense) income and other, net	587	259	(454)	9,169
Gain (loss) on change in warrant valuation	33,022	(11,502)	(9,198)	24,970
Realized gain on sale of short-term securities— available-for-sale	—	—	—	3,863
Write-down of short-term securities— available-for-sale	—	—	—	(17,001)
	33,609	(11,243)	(9,652)	21,001
Net income (loss)	$ (2,318)	$ (32,177)	$(25,159)	$ (309,964)
Net income (loss) per share—basic	$ (0.02)	$ (0.29)	$ (0.27)	
Net income (loss) per share—diluted	$ (0.02)	$ (0.29)	$ (0.27)	
Weighted average number of common shares outstanding for computing basic income (loss) per share (in thousands)	129,595	111,233	93,090	
Weighted average number of common shares outstanding for computing diluted income (loss) per share (in thousands)	129,595	111,233	93,090	

See accompanying notes to financial statements.

AVI BioPharma, Inc.
(A Development Stage Company)

Statements of Shareholders' Equity (Deficit) and Comprehensive Income (Loss)
(in thousands)

	Partnership Units	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Deficit Accumulated During the Development Stage	Total Shareholders' Equity (Deficit)
BALANCE AT JULY 22, 1980 (Inception)	—	—	$ —	$ —	$ —	$ —	$ —
Issuance of partnership units, warrants and common stock	3,615	8,273	1	33,733	—	—	33,734
Compensation expense related to issuance of warrants for common stock and partnership units	—	—	—	537	—	—	537
Exercise of warrants for partnership units and common stock	42	2,248	—	4,152	—	—	4,152
Exercise of options for common stock	—	1,036	—	4,133	—	—	4,133
Issuance of common stock for ESPP	—	854	—	2,332	—	—	2,332
Issuance of common stock and warrants for cash and securities, net of offering costs	—	47,882	5	176,795	—	—	176,800
Issuance of common stock and warrants for the acquisition of business interests	—	7,944	1	25,558	—	—	25,559
Issuance of common stock and warrants to vendors	—	860	—	3,297	—	—	3,297
Compensation expense related to issuance of options for common stock	—	—	—	7,155	—	—	7,155
Stock-based compensation	—	426	—	8,721	—	—	8,721
Conversion of debt into common stock and partnership units	9	10	—	88	—	—	88
Issuance of common stock in exchange for partnership units	(1,810)	1,633	—	—	—	—	—
Withdrawal of partnership net assets upon conveyance of technology	(1,856)	—	—	(177)	—	—	(177)
Common stock subject to rescission, net	—	(64)	—	(289)	—	—	(289)
Comprehensive income (loss):							
Write-down of short-term securities—available-for-sale	—	—	—	—	17,001	—	17,001
Realized gain on sale of short-term securities—available-for-sale	—	—	—	—	(3,766)	—	(3,766)
Unrealized loss on short-term securities—available-for-sale	—	—	—	—	(13,235)	—	(13,235)
Net loss	—	—	—	—	—	(250,310)	(250,310)
Comprehensive loss							(250,310)
BALANCE AT DECEMBER 31, 2008	—	71,102	$ 7	$ 266,035	$ —	$ (250,310)	$ 15,732
Exercise of options for common stock	—	62	—	76	—	—	76
Issuance of common stock for ESPP	—	124	—	85	—	—	85
Issuance of common stock for cash and securities, net of offering costs	—	38,520	4	30,518	—	—	30,522
Compensation expense on issuance of restricted stock	—	427	—	203	—	—	203
Stock-based compensation	—	261	—	2,171	—	—	2,171
Comprehensive income (loss):							
Net loss	—	—	—	—	—	(25,159)	(25,159)
Comprehensive loss							(25,159)

AVI BioPharma, Inc.
(A Development Stage Company)

Statements of Shareholders' Equity (Deficit) and Comprehensive Income (Loss) — (Continued)

(in thousands)

	Partnership Units	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Deficit Accumulated During the Development Stage	Total Shareholders' Equity (Deficit)
BALANCE AT DECEMBER 31, 2009	—	110,496	$ 11	$ 299,088	$ —	$ (275,469)	$ 23,630
Exercise of options for common stock	—	1,702	—	2,012	—	—	2,012
Exercise of warrants for common stock	—	308	—	549	—	—	549
Compensation expense on issuance or cancelation of restricted stock	—	(154)	—	64	—	—	64
Stock-based compensation	—	—	—	3,105	—	—	3,105
Comprehensive income (loss):							
Net loss	—	—	—	—	—	(32,177)	(32,177)
Comprehensive loss							(32,177)
BALANCE AT DECEMBER 31, 2010	—	112,352	$ 11	$ 304,818	$ —	$ (307,646)	$ (2,817)
Exercise of options for common stock	—	182	—	166	—	—	166
Exercise of warrants for common stock	—	209	—	759	—	—	759
Issuance of common stock for cash, net of offering costs	—	23,000	2	32,096	—	—	32,098
Compensation expense on issuance or cancelation of restricted stock	—	—	—	33	—	—	33
Stock-based compensation	—	—	—	3,096	—	—	3,096
Comprehensive income (loss):							
Net loss	—	—	—	—	—	(2,318)	(2,318)
Comprehensive loss							(2,318)
BALANCE AT DECEMBER 31, 2011	—	135,743	$ 13	$ 340,968	$ —	$ (309,964)	$ 31,017

See accompanying notes to financial statements.

AVI BioPharma, Inc.
(A Development Stage Company)
Statements of Cash Flows
(in thousands)

	Year ended December 31,			For the Period July 22, 1980 (Inception) through December 31, 2011
	2011	2010	2009	
Cash flows from operating activities:				
Net income (loss)	$ (2,318)	$ (32,177)	$(25,159)	$ (309,964)
Adjustments to reconcile net loss to net cash flows used in operating activities:				
Depreciation and amortization	1,300	1,463	1,379	20,445
Loss on disposal of assets	190	776	347	2,271
Realized gain on sale of short-term securities—available-for-sale	—	—	—	(3,863)
Write-down of short-term securities—available-for-sale	—	—	—	17,001
Impairment charge on real estate owned	109	408	128	1,445
Stock-based compensation	3,129	3,169	2,374	28,995
Conversion of interest accrued to common stock	—	—	—	8
Acquired in-process research and development	—	—	—	29,461
Increase (decrease) on warrant valuation	(33,022)	11,502	9,198	(24,970)
(Increase) decrease in:				
Accounts receivable and other current assets	(1,063)	(1,211)	2,621	(5,174)
Net increase in accounts payable, accrued employee compensation, and other liabilities	7,996	861	312	14,131
Net cash used in operating activities	(23,679)	(15,209)	(8,800)	(230,214)
Cash flows from investing activities:				
Purchase of property and equipment	(1,178)	(832)	(931)	(19,879)
Patent costs	(1,127)	(1,122)	(1,063)	(9,492)
Purchase of marketable securities	—	(7)	—	(112,993)
Sale of marketable securities	—	—	111	117,724
Acquisition costs	—	—	—	(2,389)
Net cash used in investing activities	(2,305)	(1,961)	(1,883)	(27,029)
Cash flows from financing activities:				
Proceeds from sale of common stock, warrants, and partnership units, net of offering costs, and exercise of options and warrants	32,380	2,561	47,840	297,878
Repayments of long-term debt	(81)	(77)	(74)	(345)
Buyback of common stock pursuant to rescission offering	—	—	—	(289)
Withdrawal of partnership net assets	—	—	—	(177)
Issuance of convertible debt	—	—	—	80
Net cash provided by financing activities	32,299	2,484	47,766	297,147
Increase (decrease) in cash and cash equivalents	6,315	(14,686)	37,083	39,904
Cash and cash equivalents:				
Beginning of period	33,589	48,275	11,192	—
End of period	$ 39,904	$ 33,589	$ 48,275	$ 39,904
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:				
Cash paid during the year for interest	$ 90	$ 94	$ 97	$ 489
SUPPLEMENTAL SCHEDULE OF NONCASH INVESTING ACTIVITIES AND FINANCING ACTIVITIES:				
Short-term securities—available-for-sale received in connection with the private offering	$ —	$ —	$ —	$ 17,897
Change in unrealized gain (loss) on short-term securities—available-for-sale	$ —	$ —	$ —	$ —
Issuance of common stock and warrants in satisfaction of liabilities	$ 643	$ —	$ —	$ 1,188
Issuance of common stock for building purchase	$ —	$ —	$ —	$ 750
Assumption of long-term debt for building purchase	$ —	$ —	$ —	$ 2,200
Issuance of common stock to acquire assets	$ —	$ —	$ —	$ 8,075
Assumption of liabilities to acquire assets	$ —	$ —	$ —	$ 2,124

See accompanying notes to financial statements.

AVI BioPharma, Inc.
(A Development Stage Company)
NOTES TO FINANCIAL STATEMENTS

1. ORGANIZATION AND NATURE OF BUSINESS

AVI BioPharma, Inc. (the "Company") is a biopharmaceutical company incorporated in the State of Oregon on July 22, 1980. The Company is focused on the discovery and development of unique RNA-based therapeutics for the treatment of rare and infectious diseases. Applying the Company's proprietary platform technologies, the Company is able to target a broad range of diseases and disorders through distinct RNA-based mechanisms of action. The Company is focused on rapidly advancing the development of its Duchenne muscular dystrophy drug candidates, including its lead product candidate, eteplirsen, which is currently in a Phase IIb clinical trial. The Company is also focused on developing therapeutics for the treatment of infectious diseases, including its lead infectious disease programs aimed at the development of drug candidates for the Ebola and Marburg hemorrhagic fever viruses for which the Company has historically received and expects to continue to receive significant financial support from U.S. government research contracts.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") and reflect the following significant accounting policies. Management has determined that the Company operates in one segment: the development of pharmaceutical products on its own behalf or in collaboration with others.

Estimates and Uncertainties

The preparation of financial statements in conformity with 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 revenue and expenses during the reporting period. Actual results could differ from those estimates. Significant items subject to such estimates and assumptions include the valuation of liability classified warrants and stock-based awards, long lived asset impairment, and revenue recognition.

Reclassifications

Certain prior year amounts have been reclassified to conform to current year presentation. These changes did not have a significant impact on the Company's net loss, assets, liabilities, shareholders' equity (deficit) or cash flows.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original maturity of 90 days or less from the date of purchase to be cash equivalents.

Accounts Receivable

Accounts receivable are stated at invoiced amount and do not bear interest. Because the accounts receivable are primarily from the U.S. government and historically no amounts have been written off, an allowance for doubtful accounts receivable is not considered necessary. The accounts receivable balance included $2,093,000 and $3,224,000 of receivables from the U.S. government that were unbilled at December 31, 2011 and 2010, respectively. $1,589,428 of the unbilled receivables at December 31, 2011 were billed to the U.S. government in January and February 2012.

Property and Equipment

Property and equipment is stated at cost and depreciated over the estimated useful lives of the assets, generally five years, using the straight-line method. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful life of the asset, which is generally five years, using the straight-line method. Expenditures for repairs and maintenance are expensed as incurred. Expenditures that increase the useful life or value of the property and equipment are capitalized. Expenditures made for equipment specifically utilized and paid for by government research projects are expensed.

Amounts included in property and equipment are as follows:

	As of December 31,	
	2011	2010
	(in thousands)	
Lab equipment	$ 6,920	$ 6,207
Office equipment	1,295	1,188
Leasehold improvements	9,959	9,638
Building (formerly held for sale)	1,856	—
	20,030	17,033
Less accumulated depreciation	(15,765)	(14,963)
Property and equipment, net	$ 4,265	$ 2,070

In November 2009, the Company decided to outsource its large-scale manufacturing activities and listed for sale the industrial property it owns in Corvallis, Oregon. In connection with this decision, the Company classified the property as “Property held for sale” in the fourth quarter of 2009, ceased depreciating the property and recorded an impairment charge of $128,000 to reduce the carrying value of the property to fair market value less the costs to sell. The Company recorded similar impairment charges in 2011 and 2010 of $109,000 and $408,000, respectively. The Company, with the assistance of independent appraisals, periodically estimated the value of the property which is considered a Level 3 fair value measure. In November 2011, the Company leased approximately 70% of the building to a third party through March 31, 2017 at rates ranging from $14,500 per month to $15,500 per month. Under the terms of the agreement, the third party can terminate the lease in November 2014 upon proper notice and delivery of a termination fee. In addition, the third party has the option to purchase the building for prices ranging from $2.0 million to $2.2 million during the initial lease term. Upon entering into the lease agreement, the Company reclassified the carrying value of the building from “Property held for sale” to “Property and equipment” and began depreciating the building over 30 years which is the remaining term of the ground lease.

Depreciation expense was $838,000 in 2011, $1,217,000 in 2010 and $1,154,000 in 2009.

Patent Costs

Patent costs consist primarily of external legal costs, filing fees incurred to file patent applications and renewal fees on proprietary technology developed or licensed by the Company. Patent costs associated with applying for a patent, being issued a patent and annual renewal fees are capitalized. Costs to defend a patent and costs to invalidate a competitor’s patent or patent application are expensed as incurred. Patent costs are amortized on a straight-line basis over the shorter of the estimated economic lives and the initial term of the patents, generally 20 years. Patent amortization expense was $462,000, $246,000 and $225,000 for the years ended December 31, 2011, 2010 and 2009, respectively. The Company also expensed the remaining net book value of previously capitalized patents that were later abandoned of $190,000, $766,000 and $347,000, in 2011, 2010 and 2009, respectively. The Company expects to incur amortization expense of approximately $415,000 per year over the next five years based on the unamortized patent costs as of December 31, 2011.

Revenue Recognition

Government Research Contract Revenue. Substantially all of the Company's revenue is generated from U.S. government research contracts and grants. See "Note 7—U.S. Government Contracts." The Company's contracts with the U.S. government are cost plus contracts providing for reimbursed costs which include overhead and general and administrative costs and a target fee. The Company recognizes revenue from U.S. government research contracts during the period in which the related expenses are incurred and presents such revenues and related expenses gross in the consolidated financial statements.

License Arrangements. License arrangements may consist of non-refundable upfront license fees, data transfer fees, research reimbursement payments, exclusive licensed rights to patented or patent pending compounds, technology access fees, various performance or sales milestones and future product royalty payments. Some of these arrangements are multiple element arrangements. The Company defers recognition of non-refundable upfront fees if it has continuing performance obligations without which the technology, right, product or service conveyed in conjunction with the non-refundable fee has no utility to the licensee that is separate and independent of Company performance under the other elements of the arrangement. In addition, if the Company has continuing involvement through research and development services that are required because its know-how and expertise related to the technology is proprietary to the Company, or can only be performed by the Company, then such up-front fees are deferred and recognized over the period of continuing involvement.

Research and Development

Research and development expense consists of costs associated with research activities as well as costs associated with the Company's product development efforts, conducting preclinical studies, and clinical trial and manufacturing costs.

Direct research and development expenses associated with the Company's programs include clinical trial site costs, clinical manufacturing costs, costs incurred for consultants and other outside services, such as data management and statistical analysis support, and materials and supplies used in support of the clinical programs. Indirect costs of the Company's clinical program include salaries, stock based compensation, and an allocation of the Company's facility costs.

Research and development expenses are expensed as incurred.

Stock Compensation

The Company issues stock options to certain employees, officers and directors. GAAP requires companies to account for stock options using the fair value method, which results in the recognition of compensation expense over the vesting period of the awards. See "Note 3—Stock Compensation" for additional information.

Income Taxes

The Company follows the asset and liability method of accounting for income taxes. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered and settled. A valuation allowance is recorded to reduce the net deferred tax asset to zero because it is more likely than not that the net deferred tax asset will not be realized. The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained upon an examination.

Fair Value of Financial Instruments

The Company measures at fair value certain financial assets and liabilities in accordance with a hierarchy of valuation techniques based on whether the inputs to those valuation techniques are observable or unobservable.

Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company's market assumptions. There are three levels of inputs that may be used to measure fair-value:

- Level 1—quoted prices for identical instruments in active markets;
- Level 2—quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets; and
- Level 3—valuations derived from valuation techniques in which one or more significant value drivers are unobservable.

The Company's assets and liabilities measured at fair value on a recurring basis consisted of the following as of the date indicated:

	Fair Value Measurement as of December 31, 2011			
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Cash equivalents	$39,904	$ 39,904	$ —	$ —
Total assets	$39,904	$ 39,904	$ —	$ —

	Fair Value Measurement as of December 31, 2010			
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Cash equivalents	$33,589	$33,589	$ —	$ —
Total assets	$33,589	$33,589	$ —	$ —

	Fair Value Measurement as of December 31, 2011			
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Warrants	$5,446	$ —	$ —	$ 5,446
Total liabilities	$5,446	$ —	$ —	$ 5,446

	Fair Value Measurement as of December 31, 2010			
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Warrants	$39,111	$ —	$ —	$39,111
Total	$39,111	$ —	$ —	$39,111

A reconciliation of the change in value of the Company's warrants for the years ended December 31, 2011, 2010 and 2009 is as follows:

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)		
	2011	2010	2009
	(in thousands)		
Balance at January 1	$39,111	$27,609	$ 1,254
Change in value of warrants	(33,022)	11,502	9,198
Reclassification to shareholders' equity upon exercise of warrants	(643)	—	—
Issuances	—	—	17,157
Balance at December 31	$ 5,446	$39,111	$27,609

See “Note 9—Warrants” for additional information related to the determination of fair value of the warrants.

The carrying amounts reported in the balance sheets for accounts receivable, accounts payable, and other current monetary assets and liabilities approximate fair value because of the immediate or short-term maturity of these financial instruments.

Rent Expense

The Company’s operating leases for its Corvallis, Oregon and Bothell, Washington facilities provide for scheduled annual rent increases throughout each lease’s term. In accordance with GAAP, the Company recognizes the effects of the scheduled rent increases on a straight-line basis over the full term of the leases, which expire in 2020 for the Corvallis, Oregon facility and in 2014 and 2012 for the Company’s Bothell, Washington facilities.

During 2011, the Company recognized $7,000 less in rent expense than the amount paid per the lease agreements and for 2010 and 2009, additional rent expense of $33,000 and $230,000, respectively, was recognized due to the amortization of future scheduled rent increases.

Commitments and Contingencies

As of December 31, 2011, the Company was not a party to any material legal proceedings with respect to itself, its subsidiaries, or any of its material properties. In the normal course of business, the Company may from time to time be named as a party to various legal claims, actions and complaints, including matters involving employment, intellectual property, effects from the use of therapeutics utilizing its technology, or others. It is impossible to predict with certainty whether any resulting liability would have a material adverse effect on the Company’s financial position, results of operations or cash flows.

Long-Lived Asset Impairment

Long-lived assets held and used by the Company and intangible assets with determinable lives are reviewed for impairment whenever events or circumstances indicate that the carrying amount of assets may not be recoverable in accordance with GAAP. The Company evaluates recoverability of assets to be held and used by comparing the carrying amount of an asset to future net undiscounted cash flows to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the assets exceeds the fair value of the assets. Such reviews assess the fair value of the assets based upon estimates of future cash flows that the assets are expected to generate.

In November 2009, the Company decided to outsource its large-scale manufacturing activities and listed for sale the industrial property it owns in Corvallis, Oregon. The Company with the assistance of independent appraisals, determined the fair value of the property less costs to sell and reduced its carrying value by $109,000, $408,000 and $128,000 in 2011, 2010 and 2009, respectively. The Company considers the property valuation a Level 3 fair value measure. In November 2011, the Company leased approximately 70% of the property to a third party as described previously under Property and Equipment.

The Company conducts periodic evaluations of the value of its patents. Pursuant to these evaluations, the Company recorded charges of $190,000, $766,000 and $347,000 in 2011, 2010 and 2009, respectively, for previously capitalized costs related to patents that were abandoned.

Recent Accounting Pronouncements

In January 2010, the Financial Accounting Standards Board ("FASB"), issued guidance to amend the disclosure requirements related to recurring and nonrecurring fair value measurements. Other than requiring additional disclosures, adoption of this new guidance did not have a material impact on the Company's financial statements.

In April 2010, the FASB issued guidance on applying the milestone method of revenue recognition for milestone payments for achieving specific performance measures when those payments are related to uncertain future events. The guidance is effective on a prospective basis to milestones achieved in fiscal years, and interim periods within those years, beginning January 1, 2011. The adoption of this new guidance did not have a material impact on the Company's financial statements.

In April 2011, the FASB issued guidance to achieve common fair value measurement and disclosure requirements between GAAP and International Financial Reporting Standards. This guidance amends current fair value measurement and disclosure guidance to include increased transparency around valuation inputs and investment categorization. The guidance is effective for fiscal years and interim periods beginning after December 15, 2011. The Company does not believe its adoption of this new guidance in the first quarter of 2012 will have a material impact on its financial statements.

In June 2011, the FASB issued guidance regarding presentation of other comprehensive income in the financial statements. This guidance will eliminate the option under GAAP to present other comprehensive income in the statement of changes in equity. Under the guidance, the Company will have the option to present the components of net income and comprehensive income in either one or two consecutive financial statements. The guidance is effective for fiscal years, and interim periods within those years, beginning after December 15, 2011. The adoption of this new guidance in the first quarter of 2012 is not expected to have a material impact on the Company's financial statements.

3. STOCK COMPENSATION

Stock Options

The Company previously sponsored a 2002 Equity Incentive Plan (the "2002 Plan") pursuant to which it issued options to purchase its common stock to the Company's employees, directors and service providers. In June 2011, the 2002 Plan was replaced by the 2011 Equity Incentive Plan (the "2011 Plan" and, together with the 2002 Plan, the "Plans") following approval by the Company's shareholders. There will be no further grants under the 2002 Plan, but awards previously granted pursuant to the 2002 Plan will continue to be governed by its terms. The 2011 Plan allows for the grant of stock options, stock appreciation rights, restricted stock awards, restricted stock units, performance shares and performance units.

In general, stock options granted under the 2002 Plan prior to December 31, 2010 vest over a three year period, with one-third of the underlying shares vesting on each anniversary of grant, and have a ten year term. Beginning in January 2011, stock options granted under the 2002 Plan vest over a four year period, with one-fourth of the underlying shares vesting on the first anniversary of the grant and 1/48th of the underlying shares vesting monthly thereafter, such that the underlying shares will be fully vested on the fourth anniversary of the grant.

In general, stock options granted under the 2011 Plan have a ten year term and typically vest over a four year period, with one-fourth of the underlying shares vesting on the first anniversary of the grant and 1/48th of the underlying shares vesting monthly thereafter, such that the underlying shares will be fully vested on the fourth anniversary of the grant. The maximum number of shares that may be issued under the 2011 Plan is 15,072,457 including 2,072,457 shares reserved but not issued under the 2002 Plan. In addition, shares subject to

outstanding awards under the 2002 Plan that expire or otherwise terminate without having been exercised in full, or are forfeited to or repurchased by the Company, will be available for issuance under the 2011 Plan, up to a maximum of 11,086,073 shares. As a result of 2002 Plan awards canceled after inception of the 2011 Plan, an additional 1,795,831 shares are available for future grants under the 2011 Plan.

As of December 31, 2011, 12,284,538 shares of common stock remained available for future grant under the 2011 Plan.

During the year ended December 31, 2011, in connection with their appointments as officers of the Company, certain officers were granted options to purchase 650,000, 800,000 and 850,000 shares of the Company's common stock at exercise prices of $2.58, $1.76, and $1.38, respectively. These options were granted outside of the Plans and have vesting schedules consistent with other grants made in 2011. The shares underlying these options are included in the following stock option tables.

A summary of the Company's stock option activity with respect to 2011, 2010 and 2009 follows:

	For the year ended December 31,					
	2011		2010		2009	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Options outstanding at beginning of year	8,490,055	$ 2.14	8,932,811	$ 2.79	7,540,873	$ 3.34
Granted	9,572,250	1.53	3,607,365	1.58	2,727,000	1.10
Exercised	(151,743)	1.09	(1,701,630)	1.18	(62,711)	1.68
Canceled or expired	(3,404,705)	1.65	(2,348,491)	4.42	(1,272,351)	2.72
Options outstanding at end of year	14,505,857	$ 1.86	8,490,055	$ 2.14	8,932,811	$ 2.79
Exercisable at end of year	4,453,266	$ 2.60	3,919,519	$ 2.93	5,119,227	$ 3.94
Vested at December 31, 2011 and expected to vest	13,867,936	$ 1.88				

	Aggregate Intrinsic Value	Weighted Average Remaining Contractual Life (Years)
Options outstanding at end of year	$37,290	6.94
Exercisable at end of year	$ 3,090	3.30
Vested at December 31, 2011 and expected to vest	$ 34,347	6.86

The weighted-average fair value per share of stock-based awards, including stock options and restricted stock grants, granted during the 2011, 2010 and 2009 was $1.02, $1.11 and $1.09, respectively. During the same periods, the total intrinsic value of stock options exercised was $82,000, $976,000 and $105,000, respectively. The total grant date fair value of stock options vested for 2011, 2010 and 2009 was $2,777,000, $2,666,000 and $1,740,000, respectively.

During 2011, 2010 and 2009, $166,000 $2,011,000 and $76,000, respectively, was received upon the exercise of stock options.

Valuation Assumptions

Stock-based compensation costs are based on the fair value calculated from the Black-Scholes option-pricing model on the date of grant for stock options. The fair value of stock grants is amortized as compensation expense on a straight-line basis over the vesting period of the grants. Stock options granted to employees are service-based and generally vest as described under "—Stock Options" above.

The fair values of stock options granted during the periods presented were measured on the date of grant using the Black-Scholes option-pricing model, with the following assumptions:

	Year Ended December 31,		
	2011	2010	2009
Risk-free interest rate	0.9% - 2.4%	1.4% - 3.8%	1.2% - 1.8%
Expected dividend yield	—%	—%	—%
Expected lives	5.2 - 8.9 years	5.3 - 8.0 years	3.6 - 9.1 years
Expected volatility	78.2% - 81.6%	82.5% - 90.3%	92.0% - 94.4%

The risk-free interest rate is estimated using an average of treasury bill interest rates over a historical period commensurate with the expected term of the option that correlates to the prevailing interest rates at the time of grant. The expected dividend yield is zero as the Company has not paid any dividends to date and does not expect to pay dividends in the future. The expected lives are estimated using expected and historical exercise behavior. The expected volatility is estimated using calculated volatility of the Company's common stock over a historical period commensurate with the expected term of the option. The amounts estimated according to the Black-Scholes option pricing model may not be indicative of the actual values realized upon the exercise of these options by the holders.

The Company is required to estimate potential forfeiture of stock grants and adjust compensation cost recorded accordingly. The estimate of forfeitures is adjusted over the requisite service period to the extent that actual forfeitures differ, or are expected to differ, from such estimates. Changes in estimated forfeitures are recognized through a cumulative catch-up in the period of change and impact the amount of stock compensation expense to be recognized in future periods.

Restricted Stock Awards

In June 2011, 2010 and 2009, the Company granted a total of 30,000, 20,000 and 25,000 shares of restricted stock, respectively to members of its board of directors. These shares vest no later than the first anniversary of the date of grant. During 2011, 2010 and 2009, the Company recognized compensation expense related to these shares of $22,000, $26,000 and $17,000, respectively.

In May 2009, the Company granted 100,000 shares of restricted stock to its Chief Business Officer. These shares would have vested upon the achievement of certain performance milestones. No compensation expense related to these shares has been recognized as the achievement of the performance milestones was not accomplished. The restricted stock was cancelled in 2010.

In January 2009, the Company granted 60,000 shares of restricted stock to its Chief Medical Officer. These shares became fully vested in July 2009 and the Company recognized compensation expense related to these shares of $82,000.

In February 2008, the Company granted 333,000 shares of restricted stock to its former Chief Executive Officer. Of these shares, 100,000 vested immediately and the remaining 233,000 were scheduled to vest over a period of four years. In April 2010, the former CEO tendered his resignation at the request of the board of directors. Pursuant to the terms of the related separation agreement, 116,500 shares of his previously granted

restricted stock immediately became fully vested at the effective date of the separation agreement. During 2010 and 2009, the Company recognized compensation expense related to these shares of $134,000 and $64,000, respectively.

The following table sets forth restricted stock activity for the years shown:

	For the year ended December 31,					
	2011		2010		2009	
	Shares	Weighted Average Grant Date Fair Value	Shares	Weighted Average Grant Date Fair Value	Shares	Weighted Average Grant Date Fair Value
Restricted Stock Awards at beginning of year	20,000	$ 1.30	300,000	$ 1.09	233,000	$ 1.09
Granted	30,000	1.41	20,000	1.30	446,000	1.03
Vested	(20,000)	1.30	(200,000)	1.09	(379,000)	1.02
Forfeited or canceled	—	—	(100,000)	1.10	—	—
Restricted Stock Awards at end of year	30,000	$ 1.41	20,000	$ 1.30	300,000	$ 1.09

The weighted-average grant-date fair value of restricted stock awards is based on the market price of the Company's common stock on the date of grant. The grant-date fair value of the restricted stock awards made during 2011, 2010 and 2009 was $1.41, $1.30 and $1.03, respectively. The total grant-date fair values of restricted stock awards that vested during 2011, 2010 and 2009 were approximately $26,000, $219,000 and $385,000, respectively.

Stock-based Compensation Expense

The amount of stock-based compensation expense recognized in 2011, 2010 and 2009 was $3,129,000, $3,169,000 and $2,374,000, respectively. A summary of the stock based compensation expense recognized in the statement of operations is as follows:

	Year Ended December 31,		
	2011	2010	2009
		(in thousands)	
Research and development	$1,279	$ 970	$1,192
General and administrative	1,850	2,199	1,182
Total	$3,129	$3,169	$ 2,374

As of December 31, 2011, there was $8,011,000 of total unrecognized compensation cost related to non-vested share-based compensation arrangements, including stock options and restricted stock, granted under the Plan. These costs are expected to be recognized over a weighted-average period of 3.1 years.

Pursuant to the terms of the separation agreement between the Company's former Chief Executive Officer and the Company, unvested options previously granted to purchase 1,166,833 shares of common stock and 116,500 shares of restricted stock immediately became fully vested and exercisable at the effective date of the separation agreement. The Company recorded a charge of stock compensation expense of $1,181,000 as a result of the accelerated vesting of these shares in 2010. In addition, the Company recorded a compensation expense of $1,384,000 in 2010 for severance pursuant to the separation agreement.

In 2011, the Company entered into separation agreements and releases with several of its former executives. Pursuant to these agreements, the Company immediately vested certain outstanding existing stock options held by these departing executives and extended the period in which the options can be exercised for a period of up to one year. As a result of these separation agreements and releases, the Company recorded a stock compensation charge of $526,000 and a compensation expense of $1,284,000 in 2011.

4. EARNINGS PER SHARE

Basic net loss per share is computed by dividing net loss by the weighted-average number of common shares outstanding. Diluted net loss per share is computed by dividing net loss by the weighted-average number of common shares and dilutive common stock equivalent shares outstanding. Given that the Company was in a loss position for each of the periods presented, there is no difference between basic and diluted net loss per share since the effect of common stock equivalents would be anti-dilutive and are therefore excluded from the diluted net loss per share calculation.

	Year Ended December 31,		
	2011	2010	2009
	(in thousands)		
Net income (loss)	$ (2,318)	$ (32,177)	$(25,159)
Weighted average number of shares of common stock and common stock equivalents outstanding:			
Weighted average number of common shares outstanding for computing basic earnings per share	129,595	111,233	93,090
Dilutive effect of warrants and stock options after application of the treasury stock method*	—	—	—
Weighted average number of common shares outstanding for computing diluted earnings per share	129,595	111,233	93,090
Net income (loss) per share—basic and diluted	$ (0.02)	$ (0.29)	$ (0.27)

* Warrants and stock options to purchase approximately 43,711,000, 38,155,000 and 41,266,000 shares of common stock as of December 31, 2011, 2010 and 2009, respectively, were excluded from the net loss per share calculation as their effect would have been anti-dilutive.

5. LIQUIDITY

Since its inception in 1980, the Company has incurred losses of approximately $310.0 million, substantially all of which resulted from expenditures related to research and development, general and administrative charges and acquired in-process research and development resulting from two acquisitions. The Company has not generated any material revenue from product sales to date, and there can be no assurance that revenues from product sales will be achieved. Moreover, even if the Company does achieve revenue from product sales, the Company expects to incur operating losses over the next several years.

The Company believes it has sufficient cash to fund operations at least through the following 12 months. The Company anticipates receiving continued funding from the U.S. government to pursue the development of its therapeutics against Ebola and Marburg, and has assumed certain revenues from these awards in providing this guidance. Should the Company's funding from the U.S. government cease or be delayed, it would have a significant negative impact on the Company's financial condition and on this guidance and the Company would likely be forced to significantly curtail its research and development efforts unless additional funding was obtained. The Company is also likely to pursue additional funding through public or private financings and cash generated from establishing collaborations or licensing its technology to other companies.

At December 31, 2011, cash and cash equivalents were $39.9 million, compared to $33.6 million at December 31, 2010. The Company's principal sources of liquidity have been equity financings and revenue from its U.S. government research contracts and grants. The Company's principal uses of cash have been research and development expenses, general and administrative expenses and other working capital requirements.

In the periods presented, nearly all of the revenue generated by the Company was derived from research contracts with and grants from the U.S. government. As of December 31, 2011, the Company had substantially

completed all of its contracts with the U.S. government except for the July 2010 agreement for the development of therapeutics against Ebola and Marburg. Pursuant to this agreement, as of December 31, 2011, the Company is currently entitled to receive up to $126.5 million of which $52.7 million has been recognized as revenue. In addition, if the U.S. government elects to exercise all its options under the agreement, an additional $161.5 million in funding is available. See "Note 7—U.S. Government Contracts" for additional information.

In December 2007 and January and August 2009, the Company sold shares of its common stock and also issued warrants to purchase shares of its common stock in offerings registered under the Securities Act of 1933 (the "Securities Act"). Additionally, in April 2011, the Company sold shares of its common stock in an offering registered under the Securities Act. See "Note 6—Equity Financing" for more information.

The likelihood of the long-term success of the Company must be considered in light of the expenses, difficulties and delays frequently encountered in the development and commercialization of new pharmaceutical products, competitive factors in the marketplace, the risks associated with U.S. government sponsored programs, and the complex regulatory environment in which the Company operates. There can be no assurance that the Company will ever achieve significant revenues or profitable operations.

6. EQUITY FINANCING

In December 2007, the Company closed a private equity financing for net proceeds of $14.4 million with several institutional investors. In the private equity financing, the Company sold units consisting of one share of common stock and a warrant to purchase one-half of a share of common stock for $1.90 per unit. A total of 10.7 million shares of common stock and warrants for the purchase of 5.3 million shares of common stock at $2.45 per share were sold. These warrants are currently exercisable and expire on December 19, 2012.

In January 2009, the Company sold approximately 14.2 million shares of its common stock and also issued warrants to purchase approximately 14.2 million shares of its common stock in an offering registered under the Securities Act. The offering generated net proceeds of approximately $15.5 million. The warrants issued to the investors in the offering have an exercise price of $1.16 per share and are exercisable at any time on or before July 30, 2014. In connection with the offering, the Company also issued to the placement agent a warrant to purchase approximately 427,000 shares of the Company's common stock at an exercise price of $1.45 per share. The warrant issued to the placement agent is exercisable on or before January 30, 2014.

In August 2009, the Company sold approximately 24.3 million shares of its common stock and also issued warrants to purchase approximately 9.7 million shares of its common stock in an offering registered under the Securities Act. The offering generated net proceeds of approximately $32.3 million. The warrants issued to the investors in the offering have an exercise price of $1.78 per share and are exercisable at any time on or before August 25, 2014.

In April 2011, the Company sold 23.0 million shares of its common stock at the price of $1.50 per share in an offering registered under the Securities Act. The offering generated net proceeds of $32.1 million.

The warrants issued in connection with the December 2007 and January and August 2009 offerings are classified as a liability due to their settlement terms. Accordingly, the fair value of the warrants is recorded on the consolidated balance sheet as a liability, and such fair value is adjusted at each financial reporting period with the adjustment to fair value reflected in the consolidated statement of operations as described in greater detail in "Note 9—Warrants." These warrants are non-cash liabilities; the Company is not required to expend any cash to settle these liabilities.

7. U.S. GOVERNMENT CONTRACTS

In the periods presented, nearly all of the revenue generated by the Company was derived from research contracts with and grants from the U.S. government. As of December 31, 2011, the Company had substantially

completed all of its contracts with the U.S. government except for the July 2010 agreement for the development of therapeutics against Ebola and Marburg. Pursuant to this agreement, as of December 31, 2011, the Company is currently entitled to receive up to $126.5 million of which $52.7 million has been recognized as revenue. In addition, if the U.S. government elects to exercise all its options under the agreement, an additional $161.5 million in funding is available.

The following table sets forth the revenue from each of the Company's contracts with the U.S. government and other revenue for the years ended December 31, 2011, 2010 and 2009.

	Year Ended December 31,		
	2011	2010	2009
	(in thousands)		
January 2006 Agreements (*Ebola and Marburg host factor, Dengue, Anthrax and Ricin*)	$ 9	$ 519	$ 2,288
November 2006 Agreement (*Ebola, Marburg and Junín Viruses*)	—	3,204	10,421
May 2009 Agreement (*H1N1*)	516	5,171	1,716
June 2010 Agreement (*H1N1*)	3,490	8,809	—
July 2010 Agreement (*Ebola and Marburg*)	42,875	9,822	—
Grants	—	1,622	725
Other Agreements	100	273	2,435
Total	$46,990	$29,420	$17,585

The following is a description of contracts with the US government contracts and grants:

January 2006 Agreements (Ebola and Marburg Host Factors, Dengue, Anthrax and Ricin)

The 2006 defense appropriations included an allocation of $11.0 million to fund the Company's ongoing defense-related programs under four different contracts, all of which were executed in 2007, and the last of which expired in October 2010. As of December 31, 2011, the Company has recognized revenue of $9.7 million with respect to these contracts and the Company does not expect to receive any additional revenue under these contracts.

November 2006 Agreement (Ebola, Marburg and Junín Viruses)

In November 2006, the Company entered into a two-year research contract with the U.S. Defense Threat Reduction Agency ("DTRA"), which entitled the Company to $28.0 million to fund development of the Company's antisense therapeutic candidates against Ebola, Marburg and Junín hemorrhagic viruses. The contract was subsequently amended twice, which amendments extended the term of the contract to February 2011 and increased the award to an aggregate of $45.4 million. In November 2010, the Company and DTRA agreed that the key activities under this contract had been completed. As of December 31, 2011, the Company had recognized revenue of $38.4 million with respect to this contract and the Company does not expect any further revenue.

May 2009 Agreement (H1N1/Influenza)

In May 2009, the Company entered into a contract with DTRA to develop swine flu drugs. Under this contract, DTRA was to pay the Company up to $4.1 million for the work involving the application of the Company's proprietary PMO and PMO *plus*® antisense chemistry. In March 2010, the contract was amended to include testing against additional influenza strains and funding increased to an aggregate of $8.1 million. As of December 31, 2011, the Company has recognized revenue of $7.4 million with respect to this contract and does not expect to receive additional revenue under this contract.

June 2010 Agreement (H1N1/Influenza)

On June 4, 2010, the Company entered into a contract with DTRA to advance the development of AVI-7100 as a medical countermeasure against the pandemic H1N1 influenza virus in cooperation with the Transformational Medical Technologies program ("TMT") of the U.S. Department of Defense ("DoD"). The contract originally provided for funding of up to $18.0 million, but, pursuant to a subsequent modification, was decreased to $13.1 million. The period of performance for this contract ended on June 3, 2011 and, as of December 31, 2011, the Company has recognized revenue of $12.3 million and does not expect to receive any additional revenue.

July 2010 Agreement (Ebola and Marburg)

On July 14, 2010, the Company was awarded a new contract with the DoD Chemical and Biological Defense Program through the U.S. Army Space and Missile Defense Command for the advanced development of the Company's hemorrhagic fever virus therapeutic candidates, AVI-6002 and AVI-6003, against the Ebola and Marburg viruses, respectively. The contract is structured into four segments for each therapeutic candidate and has an aggregate period of performance spanning approximately six years if DoD exercises its options for all segments. Activities under the first segment began in July 2010 and include Phase I studies in healthy volunteers as well as preclinical studies. In September 2011, the contract was amended to shift activities originally scheduled to occur during the second segment for each therapeutic candidate to the current funding period, which is scheduled to be completed in the second quarter of 2013. As a result of the amendment, the aggregate available funding for the current segments is approximately $126.5 million of which $52.7 million has been recognized to date.

After completion of the first segment, and each successive segment, DoD has the option to proceed to the next segment for either or both AVI-6002 and AVI-6003. If DoD exercises its options for all four segments for both AVI-6002 and AVI-6003, contract activities would include all clinical and licensure activities necessary to obtain FDA regulatory approval for each therapeutic candidate and would provide for a total funding award to the Company of up to $288.0 million over a period of six years, of which $161.5 million remains to be funded.

In February 2012, the Company announced that it received approval from the FDA to proceed with a single oligomer from AVI-6003, AVI-7288, as the lead product candidate against Marburg virus infection.

2010 Qualifying Therapeutic Discovery Project

In October 2010, the Company was awarded five cash grants for its DMD program and infectious disease programs totaling approximately $1.2 million under the U.S. government's Qualifying Therapeutic Discovery Project ("QTDP") and recognized the entire amount as revenue in 2010. The Company will not receive any further funding under the QTDP grants.

8. LONG-TERM DEBT

The Company has two loans outstanding which bear interest at 4.75%, mature in February 2027 and are collateralized by the facility the Company owns in Corvallis, Oregon. At December 31, 2011, these loans had unpaid principal balances of $1,172,000 and $670,000, for a total indebtedness of $1,842,000. The Company incurred interest expense on these loans of $90,000, $94,000 and $97,000, respectively, for 2011, 2010 and 2009.

The following table sets forth the expected future principal payments on these loans for the years shown (in thousands):

2012	$ 85
2013	90
2014	92
2015	98
2016	103
Thereafter	1,374
Total scheduled loan principal payments	$1,842

9. WARRANTS

Warrants issued in connection with the Company's December 2007, January 2009, and August 2009 financings are classified as liabilities as opposed to equity due to their settlement terms. These warrants are non-cash liabilities and the Company is not required to expend any cash to settle these liabilities.

The fair value of these warrants was recorded on the balance sheet at issuance and the warrants are marked to market at each financial reporting period, with changes in the fair value recorded as a gain or loss in the statement of operations. The fair value of the warrants is determined using the Black-Scholes option pricing model, which requires the use of significant judgment and estimates for the inputs used in the model. The following reflects the weighted-average assumptions for each of the periods indicated:

	Year Ended December 31,		
	2011	2010	2009
Risk-free interest rate	0.1% - 0.4%	0.6% - 1.0%	0.2% - 2.7%
Expected dividend yield	—%	—%	—%
Expected lives	1.0 -2.7 years	2.0 -3.7 years	0.4 - 4.7 years
Expected volatility	71.8% - 75.6%	84.7% - 90.1%	86.0% - 102.1%
Warrants classified as liabilities	28,948,962	29,409,546	30,203,466
Warrants classified as equity	255,895	255,895	2,129,530
Market value of stock at beginning of year	$ 2.12	$ 1.46	$ 0.66
Market value of stock at end of year	$ 0.75	$ 2.12	$ 1.46

The risk-free interest rate is estimated using an average of treasury bill interest rates that correlate to the prevailing interest rates at the time of the valuation date. The expected dividend yield is zero as the Company has not paid any dividends to date and does not expect to pay dividends in the future. The expected lives are based on the remaining contractual lives of the related warrants at the valuation date. The expected volatility is estimated using historical volatility of the Company's common stock, over a period commensurate with the remaining contractual lives, taking into account factors such as future events or circumstances that could impact volatility. The amounts estimated according to the Black-Scholes option pricing model may not be indicative of the actual values realized upon the exercise of these warrants by the holders.

All other warrants issued by the Company other than the warrants issued in connection with its December 2007, January 2009 and August 2009 financings are classified as equity; the fair value of the warrants was recorded as additional paid-in capital and no further adjustments are made. For 2011, 2010 and 2009, 255,895 shares, 255,895 shares and 2,129,530 shares, respectively, were underlying such warrants.

A summary of the Company's warrant activity with respect to 2011, 2010 and 2009 is as follows:

	For the year ended December 31,					
	2011		2010		2009	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Warrants outstanding at beginning of year	29,665,441	$ 1.58	32,332,996	$ 3.40	10,123,759	$ 8.54
Granted	—	—	—	—	24,369,238	1.41
Exercised	(460,584)	1.39	(308,000)	1.78	—	—
Expired	—	—	(2,359,555)	26.50	(2,160,001)	5.00
Warrants outstanding at end of year	29,204,857	$ 1.59	29,665,441	$ 1.58	32,332,996	$ 3.40
Exercisable at end of year	29,204,857	$ 1.59	29,665,441	$ 1.58	20,948,808	$ 1.60

The following table summarizes information about warrants outstanding at December 31, 2011.

Exercise Price	Outstanding Warrants at December 31, 2011	Weighted Average Remaining Contractual Life (Years)	Exercisable Warrants
$0.0003	16,667	No expiration date	16,667
0.1679	238,228	0.9	238,228
1.14	1,000	No expiration date	1,000
1.16	14,124,202	2.6	14,124,202
1.45	66,142	2.1	66,142
1.78	9,410,310	2.7	9,410,310
2.45	5,348,308	1.0	5,348,308
	29,204,857		29,204,857

10. SIGNIFICANT AGREEMENTS

Eleos Agreement

In January 2007, the Company entered into a cross-license agreement with Eleos Inc. ("Eleos") for the development of antisense drugs targeting p53, a well-studied human protein that controls cellular response to genetic damage. Under the terms of the agreement, the Company granted Eleos an exclusive license to certain of the Company's intellectual property related to treatment of cancer with p53-related drugs. In return, Eleos granted an exclusive license to its intellectual property to the Company for treatment of most viral diseases with drugs that target p53. The companies are sharing rights under their respective intellectual property licensed under the agreement in other medical fields where targeting p53 may be therapeutically useful. Each company will pay to the other milestone payments and royalty payments ranging from low single digit percentages to low double digit percentages on net sales of products that utilize technology licensed under the agreement. In addition, Eleos made an upfront payment of $500,000 to the Company. The Company recognized license fees of $125,000 in each of 2010 and 2009 and all of the upfront payment has been recognized as revenue.

Charley's Fund Agreement

In October 2007, Charley's Fund, Inc. ("Charley's Fund"), a nonprofit organization that funds drug development and discovery initiatives specific to DMD, awarded the Company a $2.45 million research grant and, in May 2009, the grant authorization was increased to a total of $5.0 million. Pursuant to the related sponsored research agreement, the grant was provided to support the development of product candidates related

to exon 50 skipping which utilize the Company's proprietary technologies. The grant requires the Company to make mid single-digit percentage royalty payments on net sales of any such products that are successfully commercialized up to the total amount received under the grant.

As of December 31, 2011, Charley's Fund has made payments of approximately $3.4 million to the Company. Revenue associated with this research and development arrangement is recognized based on the proportional performance method, using the payment received method. To date, the Company has recognized $60,000 as revenue, but did not recognize any revenue for the years ended December 31, 2011, 2010 and 2009. The Company does not expect to receive any incremental funding under the grant and has deferred $3.3 million of previous receipts which is anticipated to be recognized as revenue once the Company completes the remaining milestones and they are agreed to by Charley's Fund.

11. INCOME TAXES

As of December 31, 2011, the Company had federal and state net operating loss carryforwards of $230.9 million and $201.2 million, respectively, available to reduce future taxable income, which expire 2012 through 2032. Utilization of these net operating losses could be limited under Section 382 of the Internal Revenue Code and similar state laws based on ownership changes and the value of the Company's stock. Approximately $5.0 million of the Company's carryforwards were generated as a result of deductions related to exercises of stock options. When utilized, this portion of the Company's carryforwards, as tax affected, will be accounted for as a direct increase to contributed capital rather than as a reduction of the year's provision for income taxes. The principal differences between net operating loss carryforwards for tax purposes and the accumulated deficit result from timing differences related to depreciation, amortization, treatment of research and development costs, limitations on the length of time that net operating losses may be carried forward, and differences in the recognition of stock-based compensation.

The Company had net deferred tax assets of $116.8 million and $108.7 million at December 31, 2011 and 2010, respectively, primarily from U.S. federal and state net operating loss carryforwards, U.S. federal and state research and development credit carryforwards, share based compensation expense and intangibles. A valuation allowance was recorded to reduce the net deferred tax asset to zero because it is more likely than not that the deferred tax asset will not be realized.

An analysis of the deferred tax assets (liabilities) is as follows:

	December 31,	
	2011	2010
	(in thousands)	
Net operating loss carryforwards	$ 87,270	$ 79,813
Difference in depreciation and amortization	2,574	2,882
Capital loss carryforward	5	8
Research and development tax credits	20,740	19,739
Stock compensation	4,153	4,164
Deferred rent	372	430
Deferred revenue	1,124	1,288
Other	571	378
	116,809	108,702
Valuation allowance	(116,809)	(108,702)
Net deferred tax asset	$ —	$ —

The net change in the valuation allowance for deferred tax assets was an increase of approximately $8.1 million for the year ended December 31, 2011 and an increase of approximately $5.4 million for the year ended December 31, 2010, mainly due to the increase in the net operating loss carryforwards and research and development tax credits.

The reconciliation between the Company's effective tax rate and the income tax rate is as follows:

	Year Ended December 31,		
	2011	2010	2009
	(in thousands)		
Federal income tax rate	34.0%	34.0%	34.0%
Research and development tax credits	54.6	3.9	(4.3)
Valuation allowance	(507.4)	(16.8)	(30.4)
Permanent Differences	450.0	(12.8)	(0.2)
Other	(31.2)	(8.3)	0.9
Effective tax rate	0.0%	0.0%	0.0%

The Company's policy is to recognize interest and/or penalties related to income tax matters in income tax expense. The Company had no accrual for interest or penalties on its balance sheet at December 31, 2011 or December 31, 2010, and has not recognized interest and/or penalties in the statement of operations for 2011, 2010 or 2009. The Company has not recognized any liability for unrecognized tax benefits. There are no unrecognized tax benefits included in the balance sheet that would, if recognized, affect the effective tax rate.

12. COMMITMENTS AND CONTINGENCIES

Lease Obligations

The Company leases office and laboratory facilities under various noncancelable operating leases through December 2020. In addition, the Company leases the land in Corvallis, Oregon upon which the industrial building owned by the Company is built—See "Note 2—Summary of Significant Accounting Polices." Rent expense under these leases was $2,498,000, $1,821,000 and $1,467,000 for 2011, 2010 and 2009, respectively.

The Company's corporate headquarters are located in Bothell, Washington. The Bothell facilities consist of office and laboratory space.

The Company has a one-time option to terminate the lease for its Bothell, Washington combined office and laboratory space effective as of June 2013. To exercise this option, the Company must pay the landlord a one-time termination fee of $207,000 and provide notice to the landlord by June 2012. The base rent for this facility is approximately $46,000 per month and the base rent on the Company's second Bothell facility is approximately $12,000 per month. The amount of base rent is subject to an annual increase of approximately 3% at each Bothell facility. The Company also has temporary office space with varying termination dates through July 2012 in Cambridge, Massachusetts. The space is governed by the terms of service agreements that do not create a tenancy interest, leasehold estate or other real property interest in the Company's favor. The monthly service fee is approximately $6,600 per month. The Company also leases additional laboratory and office space in Corvallis, Oregon. Monthly rent at the Corvallis, Oregon facility is approximately $72,000 per month and is subject to an annual increase of 3%. The Corvallis, Oregon land lease is approximately $700 per month and is subject to an annual increase of 1.5%.

The following table lists the locations, expiration dates and the square footage of the Company's principal leased properties as of December 31, 2011:

Location of Property	Square Footage	Lease Expiration Date
Cambridge, Massachusetts	1,058	July 2012
Bothell, Washington	8,398	December 2012
Bothell, Washington	19,108	November 2014
Corvallis, Oregon	53,000	December 2020
Corvallis, Oregon land lease	N/A	February 2042

At December 31, 2011, the aggregate non-cancelable future minimum payments under leases were as follows:

	Year ending December 31, (in thousands)
2012	$ 2,536
2013	2,036
2014	2,034
2015	1,413
2016	1,456
Thereafter	6,496
Total minimum lease payments	$ 15,971

Royalty Obligations

The Company has license agreements for which it is obligated to pay minimum royalties if the Company does not terminate the relevant agreement. The notice period to terminate these agreements is six months or less. Royalty payments under these agreements were $94,000, $100,000 and $75,000 for 2011, 2010 and 2009, respectively.

The Company is also obligated to pay royalties upon the net sales of DMD products. The royalty rates are in the low single-digit percentages for both inside and outside the United States. In addition, the Company is obligated to pay Charley's Fund a mid single-digit percentage royalty on the net sales of any exon 50 skipping product developed pursuant to the agreement with Charley's Fund up to a maximum of $3.4 million (see "Note 10 Significant Agreements").

The commercialization of other products in early stage development may require the payment of milestones or royalties upon commercialization.

Milestone Obligations

The Company has license agreements for which it is obligated to pay development milestones as a product candidate proceeds from the filing of an Investigational New Drug application through approval for commercial sale. During 2011, 2010 and 2009, the Company milestone payments were inconsequential.

Litigation

As of December 31, 2011, the Company was not a party to any material legal proceedings with respect to itself, its subsidiaries, or any of its material properties. In the normal course of business, the Company may from time to time be named as a party to various legal claims, actions and complaints, including matters involving

employment, intellectual property, effects from the use of therapeutics utilizing its technology, or others. It is impossible to predict with certainty whether any resulting liability would have a material adverse effect on the Company's financial position, results of operations or cash flows.

Purchase Commitments

In the Company's continuing operations, it has entered into long-term contractual arrangements from time to time for the provision of goods and services. The following table presents noncancelable contractual obligations arising from these arrangements as of December 31, 2011:

	Year ending December 31, (in thousands)
2012	$ 2,925
2013	—
2014	—
2015	—
2016	—
Thereafter	—
Total purchase commitments	$ 2,925

13. RESTRUCTURING

In December 2011, the Company restructured its operations by reducing its workforce by 35 employees, or 28%. Restructuring charges totaling $1,145,000 were recorded in 2011 and included severance and related costs. The charge included $548,000 to research and development expense and $597,000 to general and administrative expense. The restructuring was completed by January 31, 2012 and all severance costs are expected to be paid by July 31, 2012.

Changes in the liability and the balance at year end related to the December 2011 restructuring plan are as follows:

	Year ending December 31, 2011 (in thousands)
Balance at January 1	$ —
Restructuring charge for severance	1,145
Severance payments	(317)
Balance at December 31	$ 828

14. FINANCIAL INFORMATION BY QUARTER (UNAUDITED)

	2011 for Quarter Ended			
	December 31	September 30	June 30	March 31
	(in thousands)			
Revenues from license fees, grants and research contracts	$ 13,585	$ 7,524	$ 11,585	$ 14,296
Operating expenses:				
Research and development	18,701	15,610	17,750	14,801
General and administrative	3,884	3,185	3,960	5,026
Operating loss	(9,000)	(11,271)	(10,125)	(5,531)
Other income (loss):				
Interest (expense) income, and other, net	147	199	151	90
Gain (loss) on change in warrant valuation	7,443	7,052	11,253	7,274
Net income (loss)	$ (1,410)	$ (4,020)	$ 1,279	$ 1,833
Net income (loss) per share—basic	$ (0.01)	$ (0.03)	$ 0.01	$ 0.02
Net income (loss) per share—diluted	$ (0.01)	$ (0.03)	$ 0.01	$ 0.02
Shares used in per share calculations—basic	135,743	135,738	134,090	112,482
Shares used in per share calculations—diluted	135,743	135,738	138,916	121,285

	2010 for Quarter Ended			
	December 31	September 30	June 30	March 31
	(in thousands)			
Revenues from license fees, grants and research contracts	$ 15,516	$ 8,702	$ 3,997	$ 1,205
Operating expenses:				
Research and development	13,886	9,059	6,931	6,096
General and administrative	3,365	3,440	4,733	2,844
Operating loss	(1,735)	(3,797)	(7,667)	(7,735)
Other income (loss):				
Interest (expense) income, and other, net	84	82	51	42
Gain (loss) on change in warrant valuation	(5,993)	(3,578)	(9,040)	7,109
Net income (loss)	$ (7,644)	$ (7,293)	$(16,656)	$ (584)
Net income (loss) per share—basic	$ (0.07)	$ (0.07)	$ (0.15)	$ (0.01)
Net income (loss) per share—diluted	$ (0.07)	$ (0.07)	$ (0.15)	$ (0.01)
Shares used in per share calculations—basic	112,328	111,767	110,383	110,429
Shares used in per share calculations—diluted	112,328	111,767	110,383	110,429

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EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
2.1	Agreement and Plan of Merger dated March 12, 2008 by and among AVI BioPharma, Inc., EB Acquisition Corp., Ercole Biotech, Inc. and the Stockholder Representative.	8-K	001-14895	2.1	3/13/08	
3.1	Fourth Restated and Amended Articles of Incorporation of AVI BioPharma, Inc.	S-8	333-175031	4.1	6/20/11	
3.2	Amended and Restated Bylaws of AVI BioPharma, Inc.	10-K	001-14895	3.4	3/15/11	
4.1	Form of Specimen Certificate for Common Stock.	10-K	001-14895	4.1	3/15/11	
4.2	Form of Warrant to Purchase Common Stock, issued on December 19, 2007.	8-K	001-14895	4.5	12/13/07	
4.3	Form of Common Stock Purchase Warrant, issued on January 30, 2009.	8-K	001-14895	4.4	1/30/09	
4.4	Form of Common Stock Purchase Warrant, issued on August 25, 2009.	8-K	001-14895	4.1	8/24/09	
10.1†	Employment Agreement with Patrick Iversen, Ph.D., dated July 14, 1997.	10KSB	000-22613	10.12	3/30/98	
10.2†	Amendment to Employment Agreement with Patrick Iversen, Ph.D., dated December 28, 2008.	10-K	001-14895	10.5	3/15/11	
10.3†	Amendment No. 2 to Employment Agreement with Patrick Iversen, Ph.D., dated January 18, 2010.	10-K	001-14895	10.6	3/15/11	
10.4†	Employment Agreement dated February 8, 2008 by and between AVI BioPharma, Inc. and Leslie Hudson, Ph.D.	10-Q	001-14895	10.63	5/12/08	
10.5†	Executive Employment Agreement dated December 17, 2010 by and between AVI BioPharma, Inc. and Christopher Garabedian.	10-K	001-14895	10.17	3/15/11	
10.6†	Executive Employment Agreement dated January 10, 2011 by and between AVI BioPharma, Inc. and Effie Toshav.	10-Q	001-14895	10.1	5/10/11	
10.7†	Executive Employment Agreement dated March 29, 2011 by and between AVI BioPharma, Inc. and Peter S. Linsley, Ph.D.	10-Q	001-14895	10.4	5/10/11	
10.8†	Executive Employment Agreement dated June 13, 2011 by and between AVI BioPharma, Inc. and Edward Kaye, M.D.	10-Q	001-14895	10.4	8/8/11	
10.9†	Stand Alone Stock Option Grant between AVI BioPharma, Inc. and Effie Toshav dated January 10, 2011.	10-Q	001-14895	10.2	5/10/11	
10.10†	Stand Alone Stock Option Grant between the Registrant and Peter Linsley dated May 16, 2011.	S-8	333-175031	4.8	6/20/11	

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Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.11†	Stand Alone Stock Option Grant between the Registrant and Edward Kaye dated June 20, 2011.	S-8	333-175031	4.9	6/20/11	
10.12†	Separation and Release Agreement dated April 20, 2010 between Leslie Hudson and AVI BioPharma, Inc.	8-K	001-14895	10.2	4/22/10	
10.13†	Separation and Release Agreement effective June 9, 2011 between Paul Medeiros and AVI BioPharma, Inc.	10-Q	001-14895	10.3	8/8/11	
10.14†	Separation Agreement and Release effective July 30, 2011 between J. David Boyle II and AVI BioPharma, Inc.	10-Q	001-14895	10.1	11/8/11	
10.15†	Separation and Release Agreement effective August 9, 2011 between Stephen Bevan Shrewsbury, M.D. and AVI BioPharma, Inc.	10-Q	001-14895	10.2	11/8/11	
10.16†	AVI BioPharma, Inc. 2002 Equity Incentive Plan.	Schedule 14A	001-14895	Appendix A	4/11/02	
10.17†	AVI BioPharma, Inc. 2011 Equity Incentive Plan.	8-K	001-14895	10.1	6/16/11	
10.18†	Form of Stock Option Award Agreement under the 2011 Equity Incentive Plan.	8-K	001-14895	10.2	6/16/11	
10.19†	Form of Notice of Grant of Restricted Stock under the 2011 Equity Incentive Plan.	8-K	001-14895	10.3	6/16/11	
10.20†	AVI BioPharma, Inc. Non-Employee Director Compensation Policy.	8-K	001-14895	10.85	10/1/10	
10.21†	Form of Indemnification Agreement.	8-K	001-14895	10.86	10/8/10	
10.22*	Collaboration and License Agreement between Isis Pharmaceuticals and Ercole Biotech, Inc. dated May 16, 2003.	10-K	001-14895	10.78	3/16/10	
10.23	Exclusive License Agreement by and between The University of Western Australia and AVI BioPharma, Inc., dated November 24, 2008.	10-K	001-14895	10.36	3/15/11	
10.24	Agreement between AVI BioPharma, Inc. and the U.S. Defense Threat Reduction Agency dated May 5, 2009.	10-Q	001-14895	10.72	8/10/09	
10.25	Amendment of Contract between AVI BioPharma, Inc. and the U.S. Defense Threat Reduction Agency (contract no. HDTRA1-07-C-0010), effective May 29, 2009.	10-Q	001-14895	10.74	8/10/09	

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Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.26	Amendment of Contract between AVI BioPharma, Inc. and the U.S. Defense Threat Reduction Agency (contract no. HDTRA 1-07-C0010), effective September 30, 2009.	10-Q	001-14895	10.77	11/9/09	
10.27*	Amendment of Contract between AVI BioPharma, Inc. and the U.S. Defense Threat Reduction Agency (contract no HDTRA 1-09-C-0046), effective March 25, 2010.	10-Q	001-14895	10.81	5/10/10	
10.28*	Contract Number HDTRA1-10-C-0079 between Defense Threat Reduction Agency and AVI BioPharma, Inc. dated June 4, 2010.	10-Q	001-14895	10.84	8/9/10	
10.29*	Modification No. PZ0001 to Contract Number HDTRA1-10-C-0079 between Defense Threat Reduction Agency and AVI BioPharma, Inc. effective March 3, 2011.	10-Q	001-14895	10.3	5/10/11	
10.30*	Modification No. P00005 to Contract Number HDTRA1-10-C-0079 between Defense Threat Reduction Agency and AVI BioPharma, Inc. effective April 13, 2011.	10-Q	001-14895	10.1	8/8/11	
10.31*	Contract Number W9113M-10-C-0056 between U.S. Army Space and Missile Defense Command and AVI BioPharma, Inc. dated July 14, 2010.	10-Q	001-14895	10.86	11/9/10	
10.32*	Modification No. P00005 to Contract Number W9113M-10-C-0056 between U.S. Army Space and Missile Defense Command and AVI BioPharma, Inc. effective August 15, 2011.	10-Q/A	001-14895	10.3	2/15/12	
10.33*	Sponsored Research Agreement between AVI BioPharma, Inc. and Charley's Fund, Inc., effective October 12, 2007.	10-K	001-14895	10.58	3/17/08	
10.34*	First Amendment to Sponsored Research Agreement between AVI BioPharma, Inc. and Charley's Fund, Inc. dated June 2, 2009.	10-Q	001-14895	10.75	8/10/09	
10.35	Shareholder's Trust Agreement between and among AVI BioPharma, Inc., AVI Shareholder Advocacy Trust, The Shareholder Advocate LLC, and Richard Macary, dated October 29, 2007.	10-K	001-14895	10.59	3/17/08	
10.36	Securities Purchase Agreement dated January 29, 2009 between AVI BioPharma, Inc. and the Purchasers identified on the signature pages thereto.	8-K	001-14895	10.67	1/30/09	
10.37†	Letter Agreement Regarding Board of Director Representation dated January 29, 2009 between AVI BioPharma, Inc. and Eastbourne Capital Management, LLC.	8-K	001-14895	10.68	1/30/09	
10.38	Commercial Lease between Research Way Investments, Landlord, and Antivirals, Inc., Tenant, effective June 15, 1992.	SB-2	333-20513	10.9	1/28/97	
10.39	Lease Extension and Modification Agreement dated September 1, 1996, by and between Research Way Investments and Antivirals, Inc.	10-K	001-14895	10.53	3/15/11	

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Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.40	Second Lease Extension and Modification Agreement dated January 24, 2006 by and between Research Way Investments and AVI BioPharma, Inc.	10-Q	001-14895	10.55	8/9/06	
10.41	Real Property Purchase Agreement by and between WKL Investments Airport, LLC and AVI BioPharma, Inc., dated March 1, 2007, as amended.	10-Q	001-14895	10.61	8/9/07	
10.42	Lease Agreement between AVI BioPharma, Inc. and Perpetua Power Source Technologies, Inc., dated November 23, 2011.					X
10.43	First Amendment to Lease Agreement dated December 22, 2011 between AVI BioPharma, Inc. and Perpetua Power Source Technologies, Inc.					X
10.44	Second Amendment to Lease Agreement dated January 20, 2012 between AVI BioPharma, Inc. and Perpetua Power Source Technologies, Inc.					X
10.45	Lease dated July 27, 2009 by and between BMR-3450 Monte Villa Parkway, LLC and AVI BioPharma, Inc.	10-Q	001-14895	10.76	11/9/09	
10.46	First Amendment to Lease dated August 30, 2011 by and between BMR-3450 Monte Villa Parkway LLC and AVI BioPharma, Inc.	10-Q	001-14895	10.4	11/8/11	
10.47	Second Amendment to Lease dated January 31, 2012 by and between BMR-3450 Monte Villa Parkway LLC and AVI BioPharma, Inc.					X
10.48	Lease dated October 20, 2010, by and between S/I North Creek VII LLC and AVI BioPharma, Inc.	10-K	001-14895	10.57	3/15/11	
10.49	Settlement Agreement dated April 20, 2010 among AVI BioPharma, Inc. and the Shareholder Group (as defined therein).	8-K	001-14895	10.1	4/22/10	
21.1	Subsidiaries of the Registrant.	10-K	001-14895	21.1	3/16/10	
23.1	Consent of Independent Registered Public Accounting Firm.					X
24.1	Power of Attorney (contained on signature page).					X
31.1	Certification of the Company’s President and Chief Executive Officer, Christopher Garabedian, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of the Company’s Vice President, Finance, Michael Jacobsen, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X

Exhibit Number	Description	Incorporated by Reference to Filings Indicated				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
32.1**	Certification of the Company's President and Chief Executive Officer, Christopher Garabedian, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2**	Certification of the Company's Vice President, Finance, Michael Jacobsen, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101.INS***	XBRL Instance Document.					X
101.SCH***	XBRL Taxonomy Extension Schema Document.					X
101.CAL***	XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.DEF***	XBRL Taxonomy Extension Definition Linkbase Document.					X
101.LAB***	XBRL Taxonomy Extension Label Linkbase Document.					X
101.PRE***	XBRL Taxonomy Extension Presentation Linkbase Document.					X

* Confidential treatment has been granted for portions of this exhibit.

** Furnished herewith.

*** In accordance with Rule 406T of Regulation S-T, the information in these exhibits is furnished and deemed not filed or a part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of Section 18 of the Exchange Act of 1934, and otherwise is not subject to liability under these sections and shall not be incorporated by reference into any registration statement or other document filed under the Securities Act of 1933, as amended, except as expressly set forth by specific reference in such filing.

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

Exhibit 10.42

LEASE AGREEMENT

THIS LEASE AGREEMENT is dated this 23rd day of November, 2011, between AVI BioPharma, Inc., an Oregon corporation ("Landlord"), and the Tenant named below.

Basic Lease Provisions

Tenant:	PERPETUA POWER SOURCE TECHNOLOGIES, INC., an Oregon corporation (the " Tenant").
Premises:	That portion of the Building (as defined below), containing approximately 25,177 rentable square feet, as determined by Landlord, as shown on Exhibit A attached hereto (the "Premises").
Building and Property:	The building (the "Building") located on approximately 2.89 acres at 1749 SW Airport Way, Corvallis, Oregon (the "Property").
Tenant's Proportionate Share of Building:	70% (based on 25,177 rentable square feet of the Premises divided by 36,150 rentable square feet of the Building).
Lease Term:	Beginning on the Commencement Date (as defined below) and ending on the last day of the sixty-fourth (64th) full calendar month thereafter. Provided no uncured default by Tenant of any of the provisions or covenants of this Lease exists, Tenant shall have the option to extend the lease for an additional twelve (12) month period as set forth in Paragraph 41.
Commencement Date:	November 23, 2011 (the "Commencement Date").
Monthly Base Rent:	The Monthly Base Rent shall be as follows (subject to Paragraph 4 herein):

Months 1 - 4:	$0 per month
Months 5 - 40:	$14,500.00 per month
Months 41 -52:	$15,000.00 per month
Months 53 -64:	$15,500.00 per month

Extension term, if option to extend exercised - Months 65 – 76: $16,000.00 per month

Notwithstanding the foregoing, Tenant shall pay no Base Rent for the first 120 days after the Commencement Date. If the 120th day is not the first day of the calendar month, the Base Rent for that month shall be prorated as provided in Section 4(a) below.

Security Deposit:	$15,500.00 (the "Security Deposit")
Broker(s):	Curt Arthur of Sperry Van Ness Commercial Advisors, LLC
Addenda:	Exhibit A (Legal Description of the Property); Exhibit B (Floor Plan); Exhibit C (List of Initial Tenant Improvements); Exhibit D (Environmental Questionnaire); Exhibit E (Rules and Regulation); Exhibit F (Tenant's Application to DEQ, Any DEQ Amendments, Modifications or Approvals).

1. **Granting Clause; Lease Term**.

(a) In consideration of the obligation of Tenant to pay rent as herein provided and in consideration of the other terms, covenants, and conditions hereof, Landlord leases to Tenant, and Tenant leases from Landlord, the Premises, to have and to hold for the Lease Term, subject to the terms, covenants and conditions of this Lease. The term of this Lease shall commence on the " Commencement Date" specified in or established above, and except as otherwise provided herein, shall continue in full force and effect through the number of months as provided above (the " Lease Term"); provided, however, that if the Commencement Date is a date other than the first day of a calendar month, the Term shall consist of the remainder of the calendar month including and following the Commencement Date, plus said number of full calendar months. If this Lease is executed before the Premises become available, and Landlord cannot deliver them by the estimated Commencement Date, or if any required repairs (if any) are not substantially completed by Landlord prior to the scheduled Commencement Date, this Lease shall not be deemed void or voidable nor shall Landlord be deemed to be in default hereunder, nor shall Landlord be liable for any loss or damage directly or indirectly arising out of such delay. Tenant agrees to accept possession of the Premises at such time as Landlord is able to tender the same, which date shall thenceforth be deemed the Commencement Date. After the Commencement Date, Tenant shall, upon demand, execute and deliver a letter of acceptance of delivery of the Premises specifying the Commencement Date. Landlord and Tenant agree that the rentable square footage of the Premises as set forth above and the Building as set forth above shall be conclusive and binding on the parties.

(b) This Lease is conditioned upon Tenant receiving all required permits for its initial Tenant Improvements listed on Exhibit C within thirty (30) days after the Commencement Date. Provided that Tenant promptly submits all information and fees required for all such permits upon the Commencement Date and diligently pursues such permits and Tenant fails to obtain all such permits within the 30-day period, Tenant may terminate this Lease by written notice to Landlord given no later than the 31st day after the Commencement Date. If Tenant fails to obtain the permits within the 30-day period but fails to terminate this Lease by the 31st day after the Commencement Date, this condition shall be deemed waived by Tenant.

(c) This Lease is also conditioned upon Landlord receiving consent to this Lease, if required, from Landlord's lender, the successor in interest to Cowlitz Bank ("Lender"), within thirty (30) days after the Commencement Date. Landlord will use commercially reasonable efforts to obtain Lender's consent to this Lease within the 30-day period, if such consent is required by Lender's loan documents. If Lender's consent is required and cannot be obtained within thirty (30) days after the Commencement Date, then (unless the parties agree to extend the deadline) the Lease will be deemed void from its inception.

(d) Provided Tenant is not then in default of any terms and conditions in the Lease, Tenant may terminate the Lease at the end of the thirty-sixth (36th) month of the Term upon 180 days prior written notice to Landlord, together with delivery of a termination fee to Landlord in an amount equal to the unamortized portion (in accordance with the formula set forth below) of brokerage fees paid by Landlord for this Lease and the amount of TI Allowance paid by Landlord hereunder.

Amortization Formula:

U = A x (RM ÷ LM)

WHERE:

U = Unamortized portion of TI Allowance and brokerage fees.
A = Amount of TI Allowance and brokerage fees, plus simple interest at 5% per annum from the date of this Lease until the date of termination.
LM = Total months during the initial Lease term.
AND:
RM = Remaining months to the end of the initial Lease term.

If Tenant fails to deliver the termination notice to Landlord by the 180th day prior to the end of the 36th month of the Term, Tenant's termination right shall be waived.

2. **Acceptance of Premises**.

(a) Subject to Paragraph 2(b) and Paragraph 2(c) below, Tenant shall accept the Premises on the Commencement Date in its "as-is" condition, subject to all applicable laws, ordinances, regulations, covenants and restrictions, and Landlord shall have no obligation to perform or pay for any repair or other work therein. Landlord has made no representation or warranty as to the suitability of the Premises for the conduct of Tenant's business, and Tenant waives any implied warranty that the Premises are suitable for Tenant's intended purposes. Tenant acknowledges that (1) it has inspected and accepts the Premises in an "As Is, Where Is" condition, (2) the Building and improvements in the Premises are suitable for the purpose for which the Premises are leased and Landlord has made no warranty, representation, covenant, or agreement with respect to the merchantability or fitness for any particular purpose of the Premises, (3) the Premises are in good and satisfactory condition, (4) no representations as to the repair of the Premises, nor promises to alter, remodel or improve the Premises have been made by Landlord, and (5) there are no representations or warranties, expressed, implied or statutory, that extend beyond the description of the Premises. Except as provided in Paragraph 10, in no event shall Landlord have any obligation for any defects in the Premises or any limitation on its use. The taking of possession of the Premises shall be conclusive evidence that Tenant accepts the Premises and that the Premises were in good condition at the time possession was taken except for items that are Landlord's responsibility under Paragraph 10 and any punchlist items agreed to in writing by Landlord and Tenant.

(b) Notwithstanding the foregoing, Landlord hereby represents that the existing plumbing, HVAC, lighting, electrical and mechanical systems servicing the Premises (collectively, the "Building Systems") shall be in good working order as of the date (the "Occupancy Date") that Tenant first uses or occupies all or any portion of the Premises, and that Landlord will arrange for service of the HVAC systems within 30 days prior to the Occupancy Date, (except to the extent any defects therein exist as a result of any act or omission of Tenant or Tenant's agents, employees, contractors, subcontractors, subtenants, assigns, licensees or invitees); provided, however, if Tenant does not deliver written notice to Landlord of any material defects with respect to the condition of the Building Systems within thirty (30) following the Occupancy Date, then Tenant shall be deemed to have inspected and accepted the same in their present condition, and the correction of any subsequently discovered defects shall be the obligation of the applicable party pursuant to the other provisions of this Lease. If a material breach of the foregoing representation exists, and Tenant timely (i.e., within thirty (30) days following the Occupancy Date) delivers written notice to Landlord setting forth in reasonable detail a description of such material breach, Landlord shall, as Tenant's sole and exclusive remedy, rectify the same at Landlord's expense.

(c) Notwithstanding the foregoing, in the event that Landlord leases the adjacent 10,973 square feet of the Building to another tenant during the Lease Term, Landlord shall, using materials, guidelines, specifications and procedures designated by Landlord, in its sole and absolute discretion, perform the following work in the Premises (collectively, the "Landlord Work") on a one-time basis only at Landlord's expense: (i) construct demising walls for a common entry area as shown in the attached Exhibit B, which shall include the existing common restrooms, and install entry doors to the two separate tenant premises; (ii) carpet and paint the common entry area and install seating and a building directory therein with signage for Tenant's business in the Premises. Until Landlord provides notice of its intention to demise and complete the common entry area, Tenant may use such space for its business as part of the Premises. Promptly upon such notice from Landlord, the parties shall enter into a lease amendment modifying the Premises to exclude the common entry area, although Tenant will continue to maintain and provide janitorial service for the common entry area. Tenant shall not (and Tenant shall ensure that its agents, employees, contractors, licensees and invitees do not) interfere with the performance of the Landlord Work and shall cooperate with Landlord in connection with the performance of the Landlord Work, including, without limitation, by moving any equipment and other property which Landlord or its contractor may request be moved. Landlord shall be permitted to perform the Landlord Work during Tenant's occupancy of the Premises, during normal business hours, without any obligation to pay overtime or other premiums. Tenant hereby agrees that the performance of the Landlord Work shall in no way constitute a constructive eviction of Tenant or entitle Tenant to any abatement of rent payable pursuant to this Lease. Landlord shall have no responsibility for, or for any reason be liable to, Tenant for any direct or indirect injury to or interference with Tenant's business arising from the performance of the Landlord Work, nor shall Tenant be entitled to any compensation or damages from Landlord for loss of the use of the whole or any part of the Premises or of Tenant's personal property or improvements resulting from the performance of the Landlord Work or Landlord's or Landlord's contractor's or agent's actions in connection with the performance of the Landlord Work, or for any inconvenience or annoyance occasioned by the performance of the Landlord Work or Landlord's or Landlord's contractor's or agent's actions in connection with the performance of the Landlord Work.

3. **Use**.

(a) Subject to Tenant's compliance with all zoning ordinances and Legal Requirements (as hereinafter defined), the Premises shall be used only for the purpose of design and manufacturing of power source technologies, including semiconductor manufacturing, and incidental office use related thereto and for no other purpose without the advance written consent of Landlord; provided, however, no retail sales may be made from the Premises. Tenant shall not conduct or give notice of any auction, liquidation, or going out of business sale on the Premises. Tenant will use the Premises in a careful, safe and proper manner and will not commit waste, overload the floor, plumbing, electrical systems or structure of the Premises or subject the Premises to use that would damage the Premises. Tenant shall not permit objectionable or unpleasant odors, smoke, dust, gas, noise, or vibrations to emanate from the Premises at levels in excess of those permitted by applicable laws, regulations, or use permits, or take any other action that would constitute a nuisance or would unreasonably disturb, interfere with, or endanger Landlord or any tenants of the Property. Outside storage, including without limitation, storage of trucks and other vehicles, is prohibited without Landlord's prior written consent.

(b) Tenant, at its sole expense, shall comply with all laws, including, without limitation, the Americans With Disabilities Act, orders, judgments, ordinances, regulations, codes, directives, permits, licenses, covenants and restrictions now or hereafter applicable to the Premises (collectively, "Legal Requirements"). To Landlord's knowledge, the Premises currently comply with such Legal Requirements. Tenant shall, at its expense, make any alterations or modifications, within or without the Premises, that are required by Legal Requirements related to Tenant's specific use or

occupation of the Premises. Tenant will not use or permit the Premises to be used for any purpose or in any manner that would void Tenant's or Landlord's insurance, increase the insurance risk, or cause the disallowance of any sprinkler credits. If any increase in the cost of any insurance on the Premises or the Property is caused by Tenant's use or occupation of the Premises, or because Tenant vacates the Premises, then Tenant shall pay the amount of such increase to Landlord. Any entrance into or occupation of the Premises by Tenant prior to the Commencement Date shall be subject to all obligations of Tenant under this Lease. Tenant represents and warrants to Landlord that Tenant is currently in compliance with and shall at all times during the Term (including any extension thereof) remain in compliance with the regulations of the Office of Foreign Asset Control (" OFAC") of the Department of the Treasury (including those named on OFAC's Specially Designated and Blocked Persons List) and any statute, executive order (including the September 24, 2001, Executive Order Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism), or other governmental action relating thereto.

(c) Tenant and its employees and invitees shall have the non-exclusive right to use, in common with others, any areas designated by Landlord from time to time as common areas for the use and enjoyment of all tenants and occupants of the Property, subject to such reasonable rules and regulations as Landlord may promulgate from time to time, including those attached hereto as Exhibit E.

4. **Base Rent**.

(a) Tenant shall pay Base Rent in the amounts set forth on the first page of this Lease. The initial monthly Base Rent, the Security Deposit, and the initial monthly installment of Tenant's Proportionate Share of the estimated Operating Expenses (as hereafter defined) increase over the Base Year (as hereafter defined) shall be due and payable on the date hereof, and Tenant promises to pay to Landlord in advance, without demand, deduction or set-off, monthly installments of Base Rent on or before the first day of each calendar month succeeding the Commencement Date. Payments of Base Rent for any fractional calendar month shall be prorated. All payments required to be made by Tenant to Landlord hereunder shall be payable at such address as Landlord may specify from time to time by written notice delivered in accordance herewith. The obligation of Tenant to pay Base Rent and other sums to Landlord shall constitute rent and the obligations of Landlord under this Lease are independent obligations. Tenant shall have no right at any time to abate, reduce, or set-off any rent due hereunder except where expressly provided in this Lease. Tenant acknowledges that late payment by Tenant to Landlord of any rent due hereunder will cause Landlord to incur costs not contemplated by this Lease, the exact amount of such costs being extremely difficult and impractical to determine. Therefore, if Tenant is delinquent in any monthly installment of Base Rent, estimated Operating Expenses or other sums due and payable hereunder for more than five (5) days, Tenant shall pay to Landlord on demand a late charge equal to five percent (5%) of such delinquent sum. The parties agree that such late charge represents a fair and reasonable estimate of the costs that Landlord will incur by reason of such late payment by Tenant. The late charge shall be deemed to be rent, and the right to require it shall be in addition to all of Landlord's other rights and remedies for a payment failure of Tenant, including the right to charge interest on the past due amount.

5. **Security Deposit**. Concurrently with the execution of this Lease, Tenant shall deposit with Landlord the Security Deposit in the amount set forth above. The Security Deposit shall be held by Landlord as security for the performance of Tenant's obligations under this Lease. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Upon each occurrence of an Event of Default (hereinafter defined), Landlord may use all or part of the Security Deposit to pay delinquent payments due under this Lease, and the cost of any damage, injury, expense or liability caused by such Event of Default, without prejudice to any other remedy provided herein or provided by law. Tenant shall pay Landlord on demand the amount that will restore the

Security Deposit to its original amount. Landlord's obligation respecting the Security Deposit is that of a debtor, not a trustee; no interest shall accrue thereon. The Security Deposit shall be the property of Landlord, but shall be paid to Tenant when Tenant's obligations under this Lease have been completely fulfilled. In the event of a sale or other disposition of the Premises, Landlord will transfer the Security Deposit to the new owner, and, thereafter, Landlord shall be released by Tenant from all responsibility for returning the Security Deposit, and Tenant shall look solely to the new owner for return of the Security Deposit. If Tenant assigns this Lease, Tenant's rights in the Security Deposit shall be deemed to be assigned to the assignee, such Security Deposit shall be held by Landlord as a Security Deposit made by the assignee and Landlord shall have no further responsibility for return of the Security Deposit to Tenant. Tenant hereby waives the provisions of any law, now or hereafter in effect, which provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of rent, to repair damage caused by Tenant or to clean the Premises, it being agreed that Landlord may, in addition, claim those sums specified in this Paragraph 5 above and/or those sums reasonably necessary to compensate Landlord for any other loss or damage, foreseeable or unforeseeable, caused by the acts or omissions of Tenant or any officer, employee, agent, contractor or invitee of Tenant.

6. **Operating Expense Payments**.

(a) During each month of the Lease Term, on the same date that Base Rent is due, Tenant shall pay Landlord an amount equal to 1/12 of the annual cost, as estimated by Landlord from time to time, of Tenant's Proportionate Share (hereinafter defined) of the increase over the Base Year Operating Expenses for the Property. Payments thereof for any fractional calendar month shall be prorated. The " Base Year" for purposes of this Lease is 2011 and for Taxes (defined below) shall mean the 2011-2012 tax year, as the Taxes may be adjusted for Landlord's pending appeal as of the date of this Lease. The provisions of this Paragraph 6 shall survive the expiration or earlier termination of the Lease.

(b) The term "Operating Expenses" means all costs and expenses incurred by Landlord in connection with the (i) Taxes (hereinafter defined) due and payable each calendar year during the Lease term, and (ii) the cost of insurance maintained by Landlord for the Property for each calendar year during the Lease term.

(c) Notwithstanding the foregoing, Operating Expenses do not include (i) debt service under mortgages or ground rent under ground leases; (ii) costs of restoration to the extent of net insurance proceeds received by Landlord with respect thereto; (iii) leasing commissions or the costs of renovating space for tenants; or (iv) any costs or legal fees incurred in connection with a dispute with any other tenant.

(d) If Tenant's total payments of Operating Expenses for any year are less than Tenant's Proportionate Share of actual increase in Operating Expenses for such year over the Base Year, then Tenant shall pay the difference to Landlord within thirty (30) days after demand, and if more, then Landlord shall retain such excess and credit it against Tenant's next payments. For purposes of calculating Tenant's Proportionate Share of Operating Expenses, a year shall mean a calendar year except the first year, which shall begin on the Commencement Date, and the last year, which shall end on the expiration of this Lease.

(e) With respect to Operating Expenses which Landlord allocates to the entire Property, Tenant's "Proportionate Share" shall be the percentage set forth on the first page of this Lease as Tenant's Proportionate Share of the Property as reasonably adjusted by Landlord in the future for changes in the physical size of the Premises or the Property; and, with respect to Operating Expenses which Landlord allocates only to the Building, Tenant's "Proportionate Share" shall be the percentage set forth on the first page of this Lease as Tenant's Proportionate Share of the Building as reasonably

adjusted by Landlord in the future for changes in the physical size of the Premises or the Building and for differences in Property Taxes due to certain tenants who may qualify for 'Enterprise Zone' exclusions. Landlord may equitably increase Tenant's Proportionate Share for any item of expense or cost reimbursable by Tenant that relates to a repair, replacement, or service that benefits only the Premises or only a portion of the Property or Building that includes the Premises or that varies with occupancy or use.

(f) Provided that Tenant is not then in default beyond any applicable cure period of its obligations to pay rent, or any other payments required to be made by it under this Lease and provided further that Tenant shall have the right, once each calendar year, to cause a Qualified Person (as defined below) to reasonably review supporting data for any portion of an actual statement of annual Operating Expenses delivered by Landlord (the " Actual Statement") (provided, however, Tenant may not have an audit right to all documentation relating to Building operations as this would far-exceed the relevant information necessary to properly document a pass-through billing statement, but real estate tax statements, and information on utilities, repairs, maintenance and insurance will be available), in accordance with the following procedure:

(i) Tenant shall, within thirty (30) days after any Actual Statement is delivered, deliver a written notice to Landlord specifying the portions of the Actual Statement that are claimed to be incorrect, and Tenant shall simultaneously pay to Landlord all amounts due from Tenant to Landlord as specified in the Actual Statement. In no event shall Tenant be entitled to withhold, deduct, or offset any monetary obligation of Tenant to Landlord under the Lease (including without limitation, Tenant's obligation to make all payments of rent and all payments of Tenant's Operating Expenses) pending the completion of and regardless of the results of any review of records under this Paragraph. The right of Tenant under this Paragraph may only be exercised once for any Actual Statement, and if Tenant fails to meet any of the above conditions as a prerequisite to the exercise of such right, the right of Tenant under this Paragraph for a particular Actual Statement shall be deemed waived.

(ii) Tenant acknowledges that Landlord maintains its records for the Property at Landlord's main office, and Tenant agrees that any review of records under this Paragraph shall be at the sole expense of Tenant and shall be conducted by a Qualified Person. Tenant acknowledges and agrees that any records reviewed under this Paragraph constitute confidential information of Landlord, which shall not be disclosed to anyone other than the Qualified Person performing the review, the principals of Tenant who receive the results of the review, and Tenant's accounting employees. The disclosure of such information to any other person, whether or not caused by the conduct of Tenant, shall constitute a material breach of this Lease.

(iii) Any errors disclosed by the review shall be promptly corrected by Landlord, provided, however, that if Landlord disagrees with any such claimed errors, Landlord shall have the right to cause another review to be made by a Qualified Person. In the event of a disagreement between the two (2) reviews, the two (2) Qualified Persons who conducted Landlord's and Tenant's reviews shall jointly designate a third (3rd) Qualified Person, at Tenant's sole cost and expense (except as otherwise indicated in this Lease), to conduct a review of Landlord's records. The review of such third (3rd) Qualified Person shall be deemed correct and binding upon the parties. In the event that the final results of such review of Landlord's records reveal that Tenant has overpaid obligations for the preceding period, the amount of such overpayment shall be credited against Tenant's subsequent installment obligations to pay the estimated Operating Expenses; provided, however, if Tenant has overpaid by more than ten percent (10%), Landlord shall pay the reasonable out-of-pocket cost of the review of Landlord's records by Tenant's Qualified Person and the reasonable out-of-pocket cost of the review of Landlord's records by the third (3rd) Qualified Person. If this Lease has expired, Landlord shall return the amount of such overpayment to Tenant within thirty (30) days after such reviews have been made. In the event that such results show that Tenant has underpaid its obligations for a preceding period, the amount of such

underpayment shall be paid by Tenant to Landlord with the next succeeding installment obligation of estimated Operating Expenses. A "Qualified Person" means an accountant or other person experienced in accounting for income and expenses of industrial projects engaged solely by Tenant on terms which do not entail any compensation based or measured in any way upon any savings in rent or reduction in Operating Expenses achieved through the inspection process.

7. **Utilities; Janitorial Service**.

(a) Tenant shall timely pay for all water, gas, electricity, heat, light, power, telephone, sewer, sprinkler services, refuse and trash collection, and other utilities and services used on the Premises (including for the common entry area, if any), all maintenance charges for utilities, and any storm sewer charges or other similar charges for utilities imposed by any governmental entity or utility provider, together with any taxes, penalties, surcharges or the like pertaining to Tenant's use of the Premises. Landlord shall have no responsibilities whatsoever in connection with the foregoing. Tenant shall pay its share of all charges for jointly metered utilities based upon consumption, as reasonably determined by Landlord. No interruption or failure of utilities shall result in the termination of this Lease or the abatement of rent.

(b) Tenant shall, at its sole cost and expense, contract directly with a janitorial service and shall pay for all janitorial services used on or for the Premises and the common entry area. Landlord shall have no obligations whatsoever in connection therewith.

8. **Taxes**. Landlord shall pay all taxes, assessments, special assessments, improvement districts, and governmental charges (collectively referred to as "Taxes") that accrue against the Property during the Lease Term. Taxes shall be included as part of the increase in Operating Expenses over the Base Year charged to Tenant pursuant to Paragraph 6 hereof during each year of the Lease Term, based upon Landlord's reasonable estimate of the amount of Taxes, and shall be subject to reconciliation and adjustment pursuant to Paragraph 6 once the actual amount of Taxes is known. Taxes shall include, without limitation, any increase in any of the foregoing based upon construction of improvements on the Property or changes in ownership (as defined in applicable laws). Landlord may contest by appropriate legal proceedings the amount, validity, or application of any Taxes or liens thereof and any costs incurred in such contest may be included as part of Taxes. All capital levies or other taxes assessed or imposed on Landlord upon the rents payable to Landlord under this Lease and any franchise tax, any excise, transaction, sales or privilege tax, assessment, levy or charge measured by or based, in whole or in part, upon such rents from the Premises and/or the Property or any portion thereof shall be paid by Tenant to Landlord monthly in estimated installments or upon demand, at the option of Landlord, as additional rent; provided, however, in no event shall Tenant be liable for any net income taxes imposed on Landlord unless such net income taxes are in substitution for any Taxes payable hereunder. If any such tax or excise is levied or assessed directly against Tenant, then Tenant shall be responsible for and shall pay the same at such times and in such manner as the taxing authority shall require. Tenant shall be liable for all taxes levied or assessed against any personal property or fixtures placed in the Premises, whether levied or assessed against Landlord or Tenant, and if any such taxes are levied or assessed against Landlord or Landlord's property and (a) Landlord pays them or (b) the assessed value of Landlord's property is increased thereby and Landlord pays the increased taxes, then Tenant shall pay to Landlord such taxes within ten (10) days after Landlord's request therefor.

9. **Insurance**.

(a) Landlord shall obtain and maintain the following: (i) all risk property insurance covering the full replacement cost of the Building (excluding foundations), less a commercially reasonable deductible if Landlord so chooses; and (ii) commercial general liability insurance, which shall

be in such amount as Landlord so determines. Landlord's insurance shall be in addition to, and not in lieu of, any insurance required to be maintained by Tenant. Landlord shall not be obligated to insure any furniture, equipment, trade fixtures, machinery, goods, or supplies which Tenant may keep or maintain in the Premises or any alteration, addition, or improvement which Tenant may make upon the Premises. In addition, Landlord may, but is not obligated to, maintain such other insurance and additional coverages as it may deem necessary, including, but not limited to, flood insurance and rent loss insurance. The premiums for the property insurance shall be included as part of the Operating Expenses, of which the amount of increase over the Base Year shall be charged to Tenant pursuant to Paragraph 6 hereof. The Property or Building may be included in a blanket policy (in which case the cost of such insurance allocable to the Property or Building will be determined by Landlord based upon the insurer's cost calculations). Notwithstanding the foregoing, Tenant shall also reimburse Landlord for any increased premiums or additional insurance that Landlord reasonably deems necessary as a result of Tenant's use of the Premises. Tenant shall not be named as an additional insured on any policy of liability insurance maintained by Landlord.

(b) Effective as of the earlier of: (1) the date Tenant enters or occupies the Premises; or (2) the Commencement Date, and continuing during the Lease Term, Tenant, at its expense, shall obtain and maintain in full force the following insurance coverage (subject to increases in coverage amounts and additional types of coverage, as reasonably determined by Landlord from time to time):

(i) all risk property insurance including theft, sprinkler leakage and boiler and machinery coverage, covering the full replacement cost of all property and improvements (including the Tenant Improvements, defined below) installed or placed in the Premises by Tenant or for Tenant's benefit. Tenant shall use the proceeds from such insurance for the replacement of trade fixtures, furniture, inventory and other personal property and for the restoration of Tenant's improvements, alterations, and additions to the Premises. Landlord shall be named as loss payee with respect to alterations, additions, or improvements of the Premises;

(ii) worker's compensation insurance in accordance with the laws of the state of Oregon with employer's liability insurance in an amount not less than $1,000,000;

(iii) business interruption, loss of income and extra expense insurance covering failure of Tenant's equipment and covering all periods of interruption, with limits not less than one hundred percent (100%) of all charges payable by Tenant under this Lease for a period of twelve (12) months;

(iv) business automobile liability insurance covering owned (if applicable), hired and non-owned vehicles with limits of $1,000,000 combined single limit per occurrence;

(v) commercial general liability insurance which insures against claims for bodily injury, personal injury, advertising injury, and property damage occurring in or about the Premises. Such commercial general liability insurance shall afford, at a minimum, the following limits: each occurrence: $1,000,000; general aggregate: $2,000,000 per location; products/completed operations aggregate: $1,000,000; personal and advertising injury liability: $1,000,000; fire damage: $50,000; fire legal liability: $50,000; medical payments: $5,000. Such commercial general liability insurance shall name Landlord, its trustees, officers, directors, members, agents, and employees, Landlord's mortgagees, and Landlord's representatives, as additional insureds. This coverage shall include blanket contractual liability, broad form property damage liability, premises-operations and products-completed operations and shall contain an exception to any pollution exclusion which insures damage or injury arising out of heat, smoke, or fumes from a hostile fire, a contractual liability

endorsement, and provide primary coverage to Landlord (any policy issued to Landlord providing duplicate or similar coverage shall be deemed excess over Tenant's policies). Such insurance shall be written on an occurrence and not a claims-made basis and contain a standard separation of insureds provision; and

(vi) umbrella/excess liability insurance, on an occurrence basis, that applies in excess of the required commercial general liability, business automobile liability, and employer's liability policies with a minimum limit of $5,000,000 per occurrence and $5,000,000 in the annual aggregate. These limits shall be in addition to and not including those stated for the underlying commercial general liability, business automobile liability, and employers liability insurance required herein. If it is typically a practice allowed by liability insurers, such excess liability policies shall name Landlord, its trustees, officers, directors, members, agents, and employees, Landlord's mortgagees, and Landlord's representatives as additional insureds.

(c) All policies required to be carried by Tenant hereunder shall be issued by and binding upon an insurance company licensed to do business in the state in which the Premises is located with a rating of at least "A" or better as set forth in the most current issue of Best's Insurance Reports, unless otherwise approved by Landlord in writing. Tenant shall not do or permit anything to be done that would invalidate the insurance policies required herein. Liability insurance maintained by Tenant shall be primary coverage without right of contribution by any similar insurance that may be maintained by Landlord. Certificates of insurance, acceptable to Landlord, evidencing the existence and amount of each insurance policy required hereunder (or, at Landlord's option, copies of the policies evidencing coverage) shall be delivered to Landlord prior to delivery or possession of the Premises and within ten (10) days following each renewal date. Certificates of insurance shall include an endorsement for each policy showing that Landlord, its trustees, officers, directors, members, agents, and employees, Landlord's mortgagees, and Landlord's representatives are included as additional insureds on liability policies and that Landlord is named as loss payee on the property insurance as stated in Paragraph 9(b)(i) above. Further, the certificates must include an endorsement for each policy whereby the insurer agrees not to cancel, non-renew, or materially alter the policy without prior written notice to Landlord.

(d) In the event that Tenant fails to comply with the foregoing insurance requirements or to timely deliver to Landlord copies of such policies and certificates evidencing the coverage required herein, Landlord, in addition to any remedy available pursuant to this Lease or otherwise, may, but shall not be obligated to, obtain such insurance and Tenant shall pay to Landlord on demand all costs thereof, plus an administrative fee of five percent (5%) of such costs.

(e) The limits of insurance required by this Lease, or as carried by Tenant, shall not limit the liability of Tenant or relieve Tenant of any obligation thereunder. Any deductibles selected by Tenant shall be the sole responsibility of Tenant.

(f) Should Tenant engage the services of any contractor to perform work in the Premises, Tenant shall ensure that such contractor carries commercial general liability (including completed operations coverage for a period of three (3) years following completion of the work), business automobile liability, umbrella/excess liability, worker's compensation and employers liability coverages in substantially the same amounts as are required of Tenant under this Lease. Such contractor shall name Landlord, its trustees, officers, directors, members, agents and employees, Landlord's mortgagees and Landlord's representatives as additional insureds on the liability policies required hereunder.

All policies required to be carried by any such contractor shall be issued by and binding upon an insurance company licensed to do business in the state in which the Premises is located with a rating of at least "A" or better as set forth in the most current issue of Best's Insurance

Reports, unless otherwise approved by Landlord. Certificates of insurance, acceptable to Landlord, evidencing the existence and amount of each insurance policy required hereunder shall be delivered to Landlord prior to the commencement of any work in the Premises. Further, the certificates must include an endorsement for each policy whereby the insurer agrees not to cancel, non-renew, or materially alter the policy without at least ten (10) days' prior written notice to Landlord. The above requirements shall apply equally to any subcontractor engaged by contractor.

(g) The all risk property insurance obtained by Landlord and Tenant shall include a waiver of subrogation by the insurers and all rights based upon an assignment from its insured, against Landlord or Tenant, their officers, directors, employees, managers, agents, invitees and contractors, in connection with any loss or damage thereby insured against. The failure of a party to insure its property shall not void this waiver. Notwithstanding anything to the contrary contained herein, Tenant hereby waives any claims against Landlord, and its officers, directors, employees, managers, agents, invitees and contractors for any loss or damage insured against or required to be insured against hereunder (whether by self-insurance or otherwise), regardless of whether the negligence or fault of Landlord caused such loss. Landlord hereby waives any claims against Tenant, and its officers, directors, employees, managers, agents, invitees and contractors for any loss or damage insured against or required to be insured against hereunder to the extent insurance proceeds are received therefor, regardless of whether the negligence or fault of Tenant caused such loss; however, Landlord's waiver shall not apply to any deductible amounts maintained by Landlord under its insurance.

10. **Landlord's Repairs**. Landlord shall maintain and repair only the roof, foundation piers, structural members of the exterior walls of the Building, and water and sewer lines up to points of common connection in good repair, reasonable wear and tear and uninsured losses and damages caused by Tenant, its agents, employees, contractors, licensees and invitees excluded. In addition, Landlord shall replace the HVAC equipment serving the Premises if it needs replacement during the Lease Term but Tenant is responsible for HVAC maintenance. The term "walls" as used in this Paragraph 10 shall not include windows, glass or plate glass, doors or overhead doors, special store fronts, dock bumpers, dock plates or levelers, or office entries, all of which shall be maintained by Tenant. Tenant shall promptly give Landlord written notice of any repair required by Landlord pursuant to this Paragraph 10, after which Landlord shall have a reasonable opportunity to repair such item. Landlord shall also maintain in good repair and condition the parking areas and other common areas of the Building, including, but not limited to the common entry area and driveways serving the Premises. Tenant hereby waives the benefit of any statute providing a right to make repairs and deduct the cost thereof from the rent.

11. **Tenant's Repairs and Maintenance**.

(a) Tenant, at its sole expense, shall repair, replace and maintain in good condition and in compliance with all Legal Requirements the landscaping at the Property and all portions of the Premises and all areas, improvements and systems exclusively serving the Premises including, without limitation, the reinforced concrete pad to be installed by Tenant on the North side of the Building, dock, dock equipment and loading areas, truck doors, plumbing, water and sewer lines from the point of common connection to and including within the Premises, fire sprinklers and fire protection systems, entries, doors, ceilings, windows, interior walls, and the interior side of demising walls, and lighting, heating, ventilation and air conditioning systems (except for replacement of the HVAC equipment), and other building and mechanical systems serving the Premises. Such repair and replacements include capital expenditures and repairs whose benefit may extend beyond the Term. In addition, Tenant shall repair all uninsured damage to the Property caused by Tenant, its agents, employees, contractors, licensees and invitees. Tenant, at Tenant's expense, shall enter into maintenance service contracts for the maintenance and repair of the heating, ventilation and air conditioning systems and other mechanical and

building systems serving the Premises; provided, however, at Landlord's written election (but at Tenant's expense), Landlord shall have the right (but not the obligation) to enter into such maintenance service contracts at Tenant's expense. The scope of services and contractors under such maintenance contracts shall be subject to Landlord's prior written approval.

(b) In the event that any repair or maintenance obligation required to be performed by Tenant hereunder may affect the structural integrity of the Building (e.g., roof, foundation, structural members of the exterior walls), prior to commencing any such repair, Tenant shall provide Landlord with written notice of the necessary repair or maintenance and a brief summary of the structural component or components of the Building that may be affected by such repair or maintenance. Within ten (10) business days after Landlord's receipt of Tenant's written notice, Landlord shall have the right, but not the obligation, to elect to cause such repair or maintenance to be performed by Landlord, or a contractor selected and engaged by Landlord, but at Tenant's sole cost and expense. The foregoing sentence is not intended to obligate Tenant to pay for repairs or maintenance to those structural items which are Landlord's responsibility pursuant to Paragraph 10 above, but shall only require Tenant to pay for the repair and maintenance to such structural components to the extent such repair or maintenance is necessitated due to the performance of Tenant's repair and maintenance obligations pursuant to this Paragraph 11.

(c) Within the fifteen (15) day period prior to the expiration or termination of this Lease, Tenant shall deliver to Landlord a certificate from an engineer reasonably acceptable to Landlord certifying that the hot water equipment and the HVAC system are then in good repair and working order. If Tenant fails to perform any repair or replacement for which it is responsible, Landlord may perform such work and be reimbursed by Tenant within ten (10) days after demand therefor. Subject to Paragraphs 9 and 15, Tenant shall bear the full cost of any repair or replacement to any part of the Building or Property that results from damage caused by Tenant, its agents, contractors, or invitees and any repair that benefits only the Premises.

12. **Tenant Improvements and Trade Fixtures**.

(a) Any alterations, additions, or improvements made by or on behalf of Tenant to the Premises (" Tenant Improvements") shall be subject to Landlord's prior written consent. Tenant shall cause, at its expense, all Tenant Improvements to comply with insurance requirements and with Legal Requirements and shall construct at its expense any alteration or modification required by Legal Requirements as a result of any Tenant Improvements.

(b) All Tenant Improvements shall be constructed in a good and workmanlike manner by contractors reasonably acceptable to Landlord and only good grades of materials shall be used. All plans and specifications for any Tenant Improvements shall be submitted to Landlord for its approval in advance of commencement of the work (including, without limitation, plans and specifications for Tenant's initial Tenant Improvements), including any changes to approved plans and specifications. Tenant's itemized list of its intended initial Tenant Improvements is attached hereto as Exhibit C. All work shall be done in conformity with a valid building permit when required, a copy of which shall be furnished to Landlord before such work is commenced. Landlord may monitor construction of the Tenant Improvements. Landlord's right to review plans and specifications and to monitor construction shall be solely for its own benefit, and Landlord shall have no duty to see that such plans and specifications or construction comply with applicable laws, codes, rules and regulations. Notwithstanding any failure by Landlord to object to any such work, Landlord shall have no responsibility for Tenant's failure to comply with all applicable governmental regulations.

(c) All work must be performed by licensed contractors approved in advance by Landlord, which consent shall not be unreasonably withheld. Tenant shall provide Landlord with the identities and mailing addresses of all persons performing work or supplying materials, prior to beginning such construction, and Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable law. Tenant shall furnish security or make other arrangements satisfactory to Landlord to assure payment for the completion of all work free and clear of liens and shall provide certificates of insurance for worker's compensation and other coverage in amounts and from an insurance company satisfactory to Landlord protecting Landlord against liability for personal injury or property damage during construction. Upon completion of any Tenant Improvements, Tenant shall deliver to Landlord statements setting forth the names of all contractors and subcontractors who did work on the Tenant Improvements and final lien waivers from all such contractors and subcontractors.

(d) Upon surrender of the Premises, all Tenant Improvements and any leasehold improvements constructed by Landlord or Tenant shall remain on the Premises as Landlord's property, except to the extent Landlord requires removal at Tenant's expense of any such items or Landlord and Tenant have otherwise agreed in writing in connection with Landlord's consent to any Tenant Improvements. Tenant may remove any Tenant Improvements which are integral or directly related to its manufacturing process. Prior to the expiration or termination of this Lease, Tenant, at its sole expense, shall repair any and all damage caused by such removal.

(e) Tenant, at its own cost and expense and without Landlord's prior approval, may erect such shelves, bins, machinery and trade fixtures (collectively "Trade Fixtures") in the ordinary course of its business provided that such items do not alter the basic character of the Premises, do not overload or damage the Premises, and may be removed without injury to the Premises, and the construction, erection, and installation thereof complies with all Legal Requirements and with Landlord's requirements set forth above. Prior to the expiration or termination of this Lease, Tenant, at its sole expense, shall remove its Trade Fixtures and shall repair any and all damage caused by such removal.

(f) Landlord agrees to pay up to an amount equal to $125,000.00 (the "TI Allowance") for the costs, fees and expenses incurred in connection with design, planning and providing Tenant Improvements to the Premises, in accordance with final space plans approved by Landlord. The TI Allowance shall be paid after completion of the Tenant Improvements upon presentation to Landlord of invoices for work performed in a manner satisfactory to Landlord, together with executed construction lien waivers in form acceptable to Landlord. Landlord reserves the right to pay the TI Allowance directly to those performing work or providing materials for the Tenant Improvements or to pay the TI Allowance by joint check.

13. **Signs**. All signs, decorations, advertising media, blinds, draperies and other window treatment or bars or other security installations visible from outside the Premises shall be subject to Landlord's prior written approval and shall conform in all respects to Landlord's requirements. Tenant shall not make any changes to the exterior of the Premises, install any exterior lights, decorations, balloons, flags, pennants, banners, or painting, or erect or install any signs, windows or door lettering, placards, decorations, or advertising media of any type which can be viewed from the exterior of the Premises, without Landlord's prior written consent, which can be withheld in Landlord's reasonable discretion. Landlord shall not be required to notify Tenant of whether it consents to any sign until it (a) has received detailed, to-scale drawings thereof specifying design, material composition, color scheme, and method of installation, and (b) has had a reasonable opportunity to review them. Upon surrender or vacation of the Premises, Tenant shall have removed all signs and repair, paint, and/or replace the building facia surface to which its signs are attached. Tenant shall obtain all applicable governmental permits and approvals for sign and exterior treatments. Within a reasonable time after the Commencement Date, Landlord will have existing 'ElectroGlas' sign removed from the building.

14. **Parking**. Tenant shall be entitled to park vehicles in common with other tenants of the Property in those areas designated by Landlord for nonreserved parking, on a first come, first served basis, subject to Tenant's obligation to comply with all Legal Requirements, the terms of this Lease and all rules and regulations which are prescribed from time to time by Landlord. From time to time, Landlord may allocate the number of parking spaces among Tenant and other tenants in the Property, any such allocation to be generally proportional to square footage under lease, and to include spaces in both the front and rear of the building. Landlord shall not be responsible for enforcing Tenant's parking rights against any third parties.

15. **Restoration**.

(a) If at any time during the Lease Term the Premises are damaged by a fire or other casualty, Landlord shall notify Tenant within sixty (60) days after such damage as to the amount of time Landlord reasonably estimates it will take to restore the Premises. If the restoration time is estimated to exceed 180 days from the date Landlord receives all permits, approvals, and licenses required to begin reconstruction, either Landlord or Tenant may elect to terminate this Lease upon notice to the other party given no later than thirty (30) days after Landlord's notice. If neither party elects to terminate this Lease or if Landlord estimates that restoration will take 180 days or less, then, subject to receipt of sufficient insurance proceeds, Landlord shall promptly restore the Premises excluding the Tenant Improvements installed by Tenant or by Landlord and paid by Tenant, subject to delays arising from the collection of insurance proceeds or from Force Majeure events (defined below). Tenant at Tenant's expense shall promptly perform, subject to delays arising from the collection of insurance proceeds, or from Force Majeure events, all repairs or restoration not required to be done by Landlord and shall promptly re-enter the Premises and commence doing business in accordance with this Lease. Base Rent shall be abated for the period of repair and restoration in the proportion which the area of the Premises, if any, which is not usable by Tenant bears to the total area of the Premises. Notwithstanding the foregoing, either party may terminate this Lease upon thirty (30) days written notice to the other if the Premises are damaged during the last year of the Lease Term and Landlord reasonably estimates that it will take more than thirty (30) days to repair such damage. Tenant shall pay to Landlord, within ten (10) days following Landlord's demand therefor, the amount of the deductible under Landlord's insurance policy. If the damage involves portions of the Building other than the Premises, Tenant shall pay only a portion of the deductible based on the ratio of the costs of repairing the damage to the Premises to the total cost of repairing all of the damage to the Building.

(b) If the Premises are destroyed or substantially damaged by any peril not covered by the insurance maintained by Landlord or any Landlord's mortgagee requires that insurance proceeds be applied to the indebtedness secured by its mortgage (defined hereinafter), Landlord or Tenant may terminate this Lease by delivering written notice of termination to the other party within thirty (30) days after such destruction or damage or such requirement is made known by any such Landlord's mortgagee, as applicable, whereupon all rights and obligations hereunder shall cease and terminate, except for any liabilities of Tenant which accrued prior to Lease termination. If Landlord elects to repair or restore such damage or destruction, this Lease shall continue in full force and effect, but Base Rent and Operating Expenses shall be proportionately reduced as provided in Paragraph 15(a). If Landlord elects to terminate this Lease, such termination shall be effective as of the date of the occurrence of such damage or destruction.

(c) Notwithstanding the foregoing, if the Premises or the Property are wholly or partially damaged or destroyed as a result of the negligence or willful misconduct or omission of Tenant, Tenant shall forthwith diligently undertake to repair or restore all such damage or destruction at Tenant's sole cost and expense, or Landlord may at its option undertake such repair or restoration at Tenant's sole cost and expense; provided, however, that Tenant shall be relieved of its repair and payment

obligations pursuant to this Paragraph 15(c) to the extent that insurance proceeds are collected by Landlord to repair such damage, although Tenant shall in such events pay to Landlord the full amount of the deductible under Landlord's insurance policy and any amounts not insured. This Lease shall continue in full force and effect without any abatement or reduction in Base Rent or Operating Expenses or other payments owed by Tenant.

(d) The provisions of this Paragraph 15 shall constitute Tenant's sole and exclusive remedy in the event of damage or destruction to the Premises or Property, and Tenant waives and releases all statutory rights and remedies in favor of Tenant in the event of damage or destruction. No damages, compensation or claim shall be payable by Landlord for any inconvenience, any interruption or cessation of Tenant's business, or any annoyance, arising from any damage or destruction of all or any portion of the Premises or Property.

16. **Condemnation**. If any part of the Premises or the Property should be taken for any public or quasi-public use under governmental law, ordinance, or regulation, or by right of eminent domain, or by private purchase in lieu thereof (a " Taking" or "Taken"), and (a) the Taking would prevent or materially interfere with Tenant's use of the Premises, (b) in Landlord's judgment would materially interfere with or impair its ownership or operation of the Property or (c) as a result of such Taking, Landlord's mortgagee accelerates the payment of any indebtedness securing all or a portion of the Property, then upon written notice by Landlord this Lease shall terminate and Base Rent shall be apportioned as of said date. If part of the Premises shall be Taken, and this Lease is not terminated as provided above, the Base Rent payable hereunder during the unexpired Lease Term shall be reduced to such extent as may be fair and reasonable under the circumstances, and Landlord shall restore the Premises as near as reasonably attainable to its condition prior to the Taking; provided, however, Landlord's obligation to so restore the Premises shall be limited to the award Landlord receives in respect of such Taking that is not required to be applied to the indebtedness secured by a mortgage. In the event of any such Taking, Landlord shall be entitled to receive the entire price or award from any such Taking without any payment to Tenant, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award, including, without limitation any award for a Taking of Tenant's leasehold interest hereunder. Tenant shall have the right, to the extent that same shall not diminish Landlord's award, to make a separate claim against the condemning authority (but not Landlord) for such compensation as may be separately awarded or recoverable by Tenant for moving expenses and damage to Tenant's Trade Fixtures, if a separate award for such items is made to Tenant. This paragraph shall be Tenant's sole and exclusive remedy in the event of any taking and Tenant hereby waives any rights and the benefits of any statute granting Tenant specific rights in the event of a Taking which are inconsistent with the provisions of this Paragraph.

17. **Assignment and Subletting**.

(a) Without Landlord's prior written consent, Tenant shall not assign this Lease or sublease all of the Premises or mortgage, pledge, or hypothecate its leasehold interest or grant any concession or license within the Premises (each being a " Transfer") and any attempt to do any of the foregoing shall be void and of no effect. For purposes of this Paragraph 17, a transfer of fifty percent (50%) or more of the ownership interests in Tenant shall be deemed a Transfer of this Lease unless such ownership interests are publicly traded. Tenant shall reimburse Landlord for all of Landlord's reasonable out-of-pocket expenses in connection with reviewing any Transfer. Upon Landlord's receipt of Tenant's written notice of a desire to assign or sublet all of the Premises, Landlord may, by giving written notice to Tenant within thirty (30) days after receipt of Tenant's notice, terminate this Lease, as of the date specified in Tenant's notice for the commencement of the proposed assignment or sublease and Landlord may enter into a lease directly with the proposed assignee or subtenant or any other party thereafter. Tenant acknowledges and agrees that Landlord may withhold its consent to any proposed assignment or

subletting for any reasonable basis including, but not limited to: (a) Tenant is in default of this Lease; (b) the assignee or subtenant is unwilling to assume in writing all of Tenant's obligations hereunder; (c) the assignee or subtenant has a financial condition which is reasonably unsatisfactory to Landlord or Landlord's mortgagee; (d) the Premises will be used for different purposes than those set forth in Section 3(a) or for a use requiring or generating Hazardous Materials, or (e) the proposed assignee or subtenant or an affiliate thereof is an existing tenant in the Property or is or has been in discussions with Landlord regarding space within the Property. Notwithstanding the above, Tenant may sublet a portion of the Premises upon at least ten (10) days written notice to Landlord, including the identity and contact information for the subtenant.

(b) Notwithstanding any Transfer, Tenant and any guarantor or surety of Tenant's obligations under this Lease shall at all times remain fully responsible and liable for the payment of the rent and for compliance with all of Tenant's other obligations under this Lease (regardless of whether Landlord's approval has been obtained for any such Transfer). In the event that the rent due and payable by a sublessee or assignee (or a combination of the rental payable under such sublease or assignment plus any bonus or other consideration therefor or incident thereto) exceeds the rental payable under this Lease, then Tenant shall be bound and obligated to pay Landlord as additional rent hereunder one-half (1/2) of such excess rental and other excess consideration within ten (10) days following receipt thereof by Tenant. If such Transfer is for less than all of the Premises, such excess rental and other excess consideration shall be calculated on a rentable square foot basis.

(c) If this Lease is assigned or if the Premises is subleased (whether in whole or in part) or in the event of the mortgage, pledge, or hypothecation of Tenant's leasehold interest or grant of any concession or license within the Premises or if the Premises be occupied in whole or in part by anyone other than Tenant, then upon a default by Tenant hereunder Landlord may collect rent from the assignee, sublessee, mortgagee, pledgee, party to whom the leasehold interest was hypothecated, concessionee or licensee or other occupant and, except to the extent set forth in the preceding subparagraph, apply the amount collected to the next rent payable hereunder; and all such rentals collected by Tenant shall be held in trust for Landlord and immediately forwarded to Landlord. No such transaction or collection of rent or application thereof by Landlord, however, shall be deemed a waiver of these provisions or a release of Tenant from the further performance by Tenant of its covenants, duties, or obligations hereunder. Any approved assignment or sublease shall be expressly subject to the terms and conditions of this Lease. Landlord's consent to any Transfer shall not waive Landlord's rights as to any subsequent Transfers. Notwithstanding anything to the contrary contained in this Lease, if Tenant or any proposed transferee claims that Landlord has unreasonably withheld or delayed its consent under this Paragraph 17 or otherwise has breached or acted unreasonably under this Paragraph 17, their sole remedies shall be a declaratory judgment and an injunction for the relief sought without any monetary damages, and Tenant hereby waives all other remedies, including, without limitation, any right at law or equity to terminate this Lease, on its own behalf and, to the extent permitted under all applicable laws, on behalf of the proposed transferee.

18. **Indemnification**. Tenant agrees to indemnify, defend (with counsel reasonably acceptable to Landlord) and hold harmless Landlord, and Landlord's agents, employees and contractors, from and against any and all claims, demands, losses, liabilities, causes of action, suits, judgments, damages, costs and expenses (including attorneys' fees) (collectively, "Claims"), arising from any occurrence in or about the Premises, the use and occupancy of the Premises, or from any activity, work, or thing done, permitted or suffered by Tenant, its agents, employees, contractors, shareholders, partners, invitees, subtenants or assignees in or about the Premises or due to any other act or omission of Tenant, its subtenants, assignees, invitees, employees, contractors and agents, or from Tenant's failure to perform its obligations under this Lease (other than any loss arising from the sole or gross negligence of Landlord or its agents), even though caused or alleged to be caused by the joint, comparative, or concurrent

negligence or fault of Landlord or its agents, and even though any such claim, cause of action, or suit is based upon or alleged to be based upon the strict liability of Landlord or its agents. This indemnity provision is intended to indemnify Landlord and its agents against the consequences of their own negligence or fault as provided above when Landlord or its agents are jointly, comparatively, or concurrently negligent with Tenant. This indemnity provision shall survive termination or expiration of this Lease. The furnishing of insurance required hereunder shall not be deemed to limit Tenant's obligations under this Paragraph 18. Landlord shall not be liable to Tenant, and Tenant hereby waives all Claims against Landlord and the other indemnified parties, for any damages arising from any act, omission or neglect of any other tenant in the Property and in no event shall Landlord or any of the other indemnified parties be liable for any injury or interruption to Tenant's business or any loss of income therefrom under any circumstances and neither Landlord nor any of the other indemnified parties shall be liable for any indirect or consequential losses or damages suffered by Tenant.

19. **Inspection and Access**. Landlord and its agents, representatives, and contractors may enter the Premises at any reasonable time to inspect the Premises and to make such repairs as may be required or permitted pursuant to this Lease and for any other business purpose. Landlord and Landlord's representatives may enter the Premises during business hours, with timing to be arranged at least twenty-four (24) hours in advance, for the purpose of showing the Premises to prospective purchasers or, during the last year of the Lease Term, to prospective tenants. During the last year of the Lease Term, Landlord may erect a suitable sign on the Premises stating the Premises are available to let or that the Property is available for sale. Landlord may grant easements, make public dedications, designate common areas and create restrictions on or about the Premises, provided that no such easement, dedication, designation or restriction materially interferes with Tenant's use or occupancy of the Premises. At Landlord's request, Tenant shall execute such instruments as may be necessary for such easements, dedications or restrictions.

20. **Quiet Enjoyment**. If Tenant shall perform all of the covenants and agreements herein required to be performed by Tenant, Tenant shall, subject to the terms of this Lease, any ground lease, mortgage or deed of trust now or hereafter encumbering the Premises and all matters of record, at all times during the Lease Term, have peaceful and quiet enjoyment of the Premises against any person claiming by, through or under Landlord, but not otherwise.

21. **Surrender**. No act by Landlord shall be an acceptance of a surrender of the Premises, and no agreement to accept a surrender of the Premises shall be valid unless it is in writing and signed by Landlord. Upon termination of the Lease Term or earlier termination of Tenant's right of possession, Tenant shall surrender the Premises to Landlord in the same condition as received, broom clean, ordinary wear and tear and casualty loss and condemnation covered by Paragraphs 15 and 16 excepted. Any Trade Fixtures, Tenant Improvements and property not so removed by Tenant as permitted or required herein shall be deemed abandoned and may be stored, removed, and disposed of by Landlord at Tenant's expense, and Tenant waives all claims against Landlord for any damages resulting from Landlord's retention and disposition of such property. All obligations of Tenant hereunder not fully performed as of the termination of the Lease Term shall survive the termination of the Lease Term, including without limitation, indemnity obligations, payment obligations with respect to Operating Expenses and all obligations concerning the condition and repair of the Premises.

22. **Holding Over**. If Tenant fails to vacate the Premises after the termination of the Lease Term, Tenant shall be a tenant at will or at sufferance, and Tenant shall pay, in addition to any other rent or other sums then due Landlord, a daily base rental equal to 200% of the Base Rent in effect on the expiration or termination date, computed on a monthly basis for each month or part thereof during such holdover, even if Landlord consents to such holdover (which consent shall be effective only if in writing). All other payments shall continue under the terms of this Lease. Tenant shall also be liable for all Operating Expenses incurred during such holdover period. In addition, Tenant shall be liable for all

damages (including attorneys' fees and expenses) of whatever type (including consequential damages) incurred by Landlord as a result of such holding over. No holding over by Tenant, whether with or without consent of Landlord, shall operate to extend this Lease except as otherwise expressly provided, and this Paragraph 22 shall not be construed as consent for Tenant to retain possession of the Premises.

23. **Events of Default**. Each of the following events shall be an event of default (" Event of Default") by Tenant under this Lease:

(i) Tenant shall fail to pay any installment of Base Rent or any other payment required herein when due, and such failure shall continue for a period of five (5) days from the date such payment was due.

(ii) Tenant or any guarantor or surety of Tenant's obligations hereunder shall (A) make a general assignment for the benefit of creditors; (B) commence any case, proceeding or other action seeking to have an order for relief entered on its behalf as a debtor or to adjudicate it a bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, liquidation, dissolution or composition of it or its debts or seeking appointment of a receiver, trustee, custodian or other similar official for it or for all or of any substantial part of its property (collectively a " proceeding for relief"); (C) become the subject of any proceeding for relief which is not dismissed within sixty (60) days of its filing or entry; or (D) be dissolved or otherwise fail to maintain its legal existence (if Tenant, guarantor or surety is a corporation, partnership or other entity).

(iii) Any insurance required to be maintained by Tenant pursuant to this Lease shall be canceled or terminated or shall expire or shall be reduced or materially changed, except, in each case, as permitted in this Lease.

(iv) Tenant shall fail to occupy or shall vacate the Premises or shall fail to continuously operate its business at the Premises for the permitted use set forth herein, whether or not Tenant is in monetary or other default under this Lease.

(v) Tenant shall attempt or there shall occur any assignment, subleasing or other transfer of Tenant's interest in or with respect to this Lease except as otherwise permitted in this Lease.

(vi) Tenant shall fail to discharge or bond over any lien placed upon the Premises in violation of this Lease within thirty (30) days after any such lien or encumbrance is filed against the Premises.

(vii) Tenant shall fail to execute any instrument of subordination or attornment or any estoppel certificate within the time periods set forth in Paragraphs 27 and 29 respectively following Landlord's request for the same.

(viii) Tenant shall breach any of the requirements of Paragraph 30 and such failure shall continue for a period of five (5) days or more after notice from Landlord to Tenant.

(ix) Tenant shall fail to comply with any provision of this Lease other than those specifically referred to in this Paragraph 23, and except as otherwise expressly provided herein, such default shall continue for more than thirty (30) days after Landlord shall have given Tenant written notice of such default (unless such performance will, due to the nature of the obligation, require a period of time in excess of thirty (30) days, then after such time as is reasonably necessary, provided that Tenant commences such cure within the 30-day period and thereafter diligently prosecutes the cure to completion.).

Any notices to be provided by Landlord under this Paragraph 23 shall be in lieu of, and not in addition to, any notice required under applicable Oregon law.

24. **Landlord's Remedies**. Upon the occurrence of any default, Landlord shall have the following rights and remedies, in addition to those allowed by law or in equity, any one or more of which may be exercised or not exercised without precluding the Landlord from exercising any other remedy provided in this Lease or otherwise allowed by law or in equity:

(a) Termination of Lease. Landlord may terminate this Lease and Tenant's right to possession of the Premises. If Tenant has abandoned and vacated the Premises, the mere entry of the Premises by Landlord in order to perform acts of maintenance, cure defaults, preserve the Premises or to attempt to relet the Premises, or the appointment of a receiver in order to protect the Landlord's interest under this Lease, shall not be deemed a termination of Tenant's right to possession or a termination of this Lease unless Landlord has notified Tenant in writing that this Lease is terminated. Notification of any default described in Section 23 of this Lease shall be in lieu of, and not in addition to, any notice required under applicable Oregon law. If Landlord terminates this Lease and Tenant's right to possession of the Premises, Landlord may recover from Tenant:

(i) The amount of unpaid rent which had been earned at the time of termination; plus

(ii) The amount by which the unpaid rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(iii) The amount by which the unpaid rent for the balance of the Term after the time of the award exceeds the amount of such rental loss that Tenant proves could be reasonably avoided; plus

(iv) Any other amounts necessary to compensate the Landlord for all of the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, including any legal expenses, brokers commissions or finders fees (in connection with reletting the Premises and the pro rata portion of any leasing commission paid by Landlord in connection with this Lease which is applicable to the portion of the Term, including option periods, which is unexpired as of the date on which this Lease terminated), the costs of repairs, cleanup, refurbishing, removal and storage or disposal of Tenant's personal property, equipment, fixtures and anything else that Tenant is required under this Lease to remove but does not remove (including those alterations which Tenant is required to remove pursuant to an election by Landlord and Landlord actually removes whether notice to remove shall be delivered to Tenant), and any costs for alterations, additions and renovations incurred by Landlord in regaining possession of and reletting (or attempting to relet) the Premises. Tenant shall also reimburse Landlord for the pro rata portion of TI Allowance paid by Landlord to install Tenant Improvements on the Premises which is applicable to that portion of the Term including any terminated option periods which is unexpired as of the date on which this Lease terminated, discounted to present value.

All computations of the "worth at the time of the award" of amounts recoverable by Landlord under (i) and (ii) hereof shall be computed by allowing interest at the maximum lawful contract rate per annum. The "worth at the time of the award" recoverable by Landlord under (iii) and the

discount rate for purposes of determining any amounts recoverable under (iv), if applicable, shall be computed by discounting the amount recoverable by Landlord at the discount rate of the Federal Reserve Bank, San Francisco, California, at the time of the award plus one percent (1%).

Upon termination of this Lease, whether by lapse of time or otherwise, Tenant shall immediately vacate the Premises and deliver possession to Landlord, and Landlord shall have the right to re-enter the Premises.

(b) Lease to Remain in Effect. Notwithstanding Landlord's right to terminate this Lease, Landlord may, at its option, even though Tenant has breached this Lease and abandoned the Premises, continue this Lease in full force and effect and not terminate Tenant's right to possession, and enforce all of Landlord's rights and remedies under this Lease. In such event, Landlord may continue the Lease in effect after Tenant's breach and abandonment and recover rent as it becomes due. Further, in such event Landlord shall be entitled to recover from Tenant all costs of maintenance and preservation of the Premises, and all costs, including attorneys' fees and receivers' fees, incurred in connection with appointment of and performance by a receiver to protect the Premises and Landlord's interest under this Lease. Neither re-entry or taking possession of the Premises by Landlord nor service of any notice permitted or required under applicable Oregon law shall be construed as an election to terminate this Lease unless a notice (signed by a duly authorized representative of Landlord) of intention to terminate this Lease is given to Tenant.

(c) All Sums Collectible as Rent. All sums due and owing to Landlord by Tenant under this Lease shall be collectible by Landlord as rent.

(d) No Surrender. No act or omission by Landlord or its agents during the Term shall be an acceptance of a surrender of the Premises, and no agreement to accept a surrender of the Premises shall be valid unless made in writing and signed by a duly authorized representative of Landlord. Landlord shall be entitled to a restraining order or injunction to prevent Tenant from defaulting under any of its obligations other than the payment of rent or other sums due hereunder.

(e) Effect of Termination. Neither the termination of this Lease nor the exercise of any remedy under this Lease or otherwise available at law or in equity shall affect Landlord's right of indemnification set forth in this Lease or otherwise available at law or in equity for any act or omission of Tenant, and all rights to indemnification and other obligations of Tenant intended to be performed after termination of this Lease shall survive termination of this Lease.

25. **Tenant's Remedies/Limitation of Liability**. Landlord shall not be in default hereunder unless Landlord fails to perform any of its obligations hereunder within thirty (30) days after written notice from Tenant specifying such failure (unless such performance will, due to the nature of the obligation, require a period of time in excess of thirty (30) days, then after such period of time as is reasonably necessary). All obligations of Landlord hereunder shall be construed as covenants, not conditions; and Tenant may not terminate this Lease for breach of Landlord's obligations hereunder. Tenant hereby waives the benefit of any laws granting it the right to perform Landlord's obligations or the right to terminate this Lease or withhold rent on account of any Landlord default. All obligations of Landlord under this Lease will be binding upon Landlord only during the period of its ownership of the Premises and not thereafter. The term "Landlord" in this Lease shall mean only the owner, for the time being of the Premises, and in the event of the transfer by such owner of its interest in the Premises, such owner shall thereupon be released and discharged from all obligations of Landlord thereafter accruing, but such obligations shall be binding during the Lease Term upon each new owner for the duration of such owner's ownership. Any liability of Landlord under this Lease or arising out of the relationship between Landlord and Tenant shall be limited solely to Landlord's equity interest in the Building, and in

no event shall any personal liability be asserted against Landlord, its partners, shareholders, members, directors, employees or agents in connection with this Lease nor shall any recourse be had to any other property or assets of Landlord.

26. **Waiver of Jury Trial**. TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATI IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

27. **Subordination**.

(a) This Lease and Tenant's interest and rights hereunder are and shall be subject and subordinate at all times to the lien of any deed of trust or mortgage or any ground lease, now existing or hereafter created on or against the Property or the Premises, and all amendments, restatements, renewals, modifications, consolidations, refinancing, assignments and extensions thereof, without the necessity of any further instrument or act on the part of Tenant. Tenant shall comply with the ground lease for the Property between Landlord and the City of Corvallis, as amended. Tenant agrees, at the election of the holder of any such mortgage, to attorn to any such holder. The provisions of this Paragraph 27 shall be self-operative and no further instrument shall be required to effect such subordination or attornment; however, Tenant agrees to execute, acknowledge and deliver such instruments, confirming such subordination and such instruments of attornment as shall be requested by any such holder within ten (10) days of such request. Tenant's obligation to furnish each such instrument requested hereunder in the time period provided is a material inducement for Landlord's execution of this Lease. Tenant hereby appoints Landlord attorney in fact for Tenant irrevocably (such power of attorney being coupled with an interest) to execute, acknowledge and deliver any such instrument and instruments for and in the name of the Tenant and to cause any such instrument to be recorded.

(b) Notwithstanding the foregoing, any such holder may at any time subordinate its mortgage to this Lease, without Tenant's consent, by notice in writing to Tenant, and thereupon this Lease shall be deemed prior to such mortgage without regard to their respective dates of execution, delivery or recording and in that event such holder shall have the same rights with respect to this Lease as though this Lease had been executed prior to the execution, delivery and recording of such mortgage and had been assigned to such holder. The term " mortgage" whenever used in this Lease shall be deemed to include deeds of trust, security assignments and any other encumbrances, and any reference to the " holder" of a mortgage shall be deemed to include the beneficiary under a deed of trust.

(c) Tenant shall not seek to enforce any remedy it may have for any default on the part of Landlord without first giving written notice by certified mail, return receipt requested, specifying the default in reasonable detail to any mortgage holder whose address has been given to Tenant, and affording such mortgage holder a reasonable opportunity to perform Landlord's obligations hereunder. Notwithstanding any such attornment or subordination of a mortgage to this Lease, the holder of any mortgage shall not be liable for any acts of any previous landlord, shall not be obligated to install any tenant improvements, and shall not be bound by any amendment to which it did not consent in writing nor any payment of rent made more than one month in advance.

(d) If requested by Tenant, Landlord shall request that any holder of mortgage against the Property provide a nondisturbance agreement to Tenant that provides that so long as Tenant is not in default of this Lease, the holder will not terminate the Lease.

(e) Landlord agrees that it will not unreasonably withhold consent to execution of a commercially reasonable subordination, nondisturbance, attornment, estoppel, access or other agreement as requested from time to time by a lender of Tenant or an affiliate of Tenant for the benefit of a lender in securing lender's interest in or access to any collateral securing a loan made by such lender, including but not limited to equipment installed on the Premises. Additionally, Landlord agrees that any equipment installed in but not affixed to the Premises shall be personal property of Tenant and shall not become fixtures and Landlord shall have no Interest in the same.

28. **Mechanic's Liens**. Tenant has no express or implied authority to create or place any lien or encumbrance of any kind upon, or in any manner to bind the interest of Landlord or Tenant in, the Premises or to charge the rentals payable hereunder for any claim in favor of any person dealing with Tenant, including those who may furnish materials or perform labor for any construction or repairs. Tenant covenants and agrees that it will pay or cause to be paid all sums legally due and payable by it on account of any labor performed or materials furnished in connection with any work performed on the Premises and that it will save and hold Landlord harmless from all loss, cost or expense based on or arising out of asserted claims or liens against the leasehold estate or against the interest of Landlord in the Premises or under this Lease. Tenant shall give Landlord immediate written notice of the placing of any lien or encumbrance against the Premises and cause such lien or encumbrance to be discharged within thirty (30) days of the filing or recording thereof; provided, however, Tenant may contest such liens or encumbrances as long as such contest prevents foreclosure of the lien or encumbrance and Tenant causes such lien or encumbrance to be bonded or insured over in a manner satisfactory to Landlord within such thirty (30) day period.

29. **Estoppel Certificates**. Tenant agrees, from time to time, within ten (10) days after request of Landlord, to execute and deliver to Landlord, or Landlord's designee, any estoppel certificate requested by Landlord, stating that this Lease is in full force and effect, the date to which rent has been paid, that Landlord is not in default hereunder (or specifying in detail the nature of Landlord's default), the termination date of this Lease and such other matters pertaining to this Lease as may be requested by Landlord. Tenant's obligation to furnish each estoppel certificate in a timely fashion is a material inducement for Landlord's execution of this Lease No cure or grace period provided in this Lease shall apply to Tenant's obligation to timely deliver an estoppel certificate. Tenant hereby irrevocably appoints Landlord as its attorney in fact to execute on its behalf and in its name any such estoppel certificate if Tenant fails to execute and deliver the estoppel certificate within ten (10) days after Landlord's written request thereof.

30. **Environmental Requirements**.

(a) Tenant will conduct its operations in strict compliance with all applicable Environmental Requirements, as defined in (b). Tenant has fully and accurately completed Landlord's Pre-Leasing Environmental Exposure Questionnaire (" Environmental Questionnaire") attached hereto as Exhibit D incorporated herein by reference. Tenant shall complete and certify to disclosure statements as requested by Landlord from time to time relating to Tenant's transportation, storage, use, generation, manufacture, or release of Hazardous Materials on the Premises, and Tenant shall promptly deliver to Landlord a copy of any notice of violation relating to the Premises or Property of any Environmental Requirement. A copy of Tenant's application to the Oregon Department of Environmental Quality ("DEQ") is attached as Exhibit F, together with any DEQ amendments, modifications or approvals.

(b) The term "Environmental Requirements" means all applicable present and future statutes, regulations, ordinances, rules, codes, judgments, permits, authorizations, orders, policies or other similar requirements of any governmental authority, agency or court regulating or relating to health, safety, or environmental conditions on, under, or about the Premises or the

environment, including without limitation, the following: the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; the Clean Air Act; the Clean Water Act; the Toxic Substances Control Act and all state and local counterparts thereto, and any common or civil law obligations including, without limitation, nuisance or trespass, and any other requirements of Paragraphs 3 and 31 of this Lease. The term "Hazardous Materials" means and includes any substance, material, waste, pollutant, or contaminant that is or could be regulated under any Environmental Requirement or that may adversely affect human health or the environment, including, without limitation, any solid or hazardous waste, hazardous substance, asbestos, petroleum (including crude oil or any fraction thereof, natural gas, synthetic gas, polychlorinated biphenyls (PCBs), and radioactive material). For purposes of Environmental Requirements, to the extent authorized by law, Tenant is and shall be deemed to be the responsible party, including without limitation, the "owner" and "operator" of Tenant's "facility" and the "owner" of all Hazardous Materials brought on the Premises by Tenant, its agents, employees, contractors or invitees, and the wastes, by-products, or residues generated, resulting, or produced therefrom.

(c) Tenant, at its sole cost and expense, shall remove all Hazardous Materials stored, disposed of or otherwise released by Tenant, its assignees, subtenants, agents, employees, contractors or invitees onto or from the Premises or Property, in a manner and to a level satisfactory to Landlord in its sole discretion, but in no event to a level and in a manner less than that which complies with all Environmental Requirements and does not limit any future uses of the Premises or Property or require the recording of any deed restriction or notice regarding the Premises or Property. Tenant shall perform such work at any time during the period of the Lease upon written request by Landlord or, in the absence of a specific request by Landlord, before Tenant's right to possession of the Premises terminates or expires. If Tenant fails to perform such work within the time period specified by Landlord or before Tenant's right to possession terminates or expires (whichever is earlier), Landlord may at its discretion, and without waiving any other remedy available under this Lease or at law or equity (including without limitation an action to compel Tenant to perform such work), perform such work at Tenant's cost. Tenant shall pay all costs incurred by Landlord in performing such work within ten (10) days after Landlord's request therefor. Such work performed by Landlord is on behalf of Tenant and Tenant remains the owner, generator, operator, transporter, and/or arranger of the Hazardous Materials for purposes of Environmental Requirements. Tenant agrees not to enter into any agreement with any person, including without limitation any governmental authority, regarding the removal of Hazardous Materials that have been disposed of or otherwise released onto or from the Premises without the written approval of the Landlord.

(d) Tenant shall indemnify, defend, and hold Landlord harmless from and against any and all losses (including, without limitation, diminution in value of the Premises or the Property and loss of rental income from the Property), claims, demands, actions, suits, damages (including, without limitation, punitive damages), expenses (including, without limitation, remediation, removal, repair, corrective action, or cleanup expenses), and costs (including, without limitation, actual attorneys' fees, consultant fees or expert fees and including, without limitation, removal or management of any asbestos brought into the Premises or disturbed in breach of the requirements of this Paragraph 30, regardless of whether such removal or management is required by law) which are brought or recoverable against, or suffered or incurred by Landlord as a result of any release of Hazardous Materials or any breach of the requirements under this Paragraph 30 by Tenant, its agents, employees, contractors, subtenants, assignees or invitees, regardless of whether Tenant had knowledge of such noncompliance. The obligations of Tenant under this Paragraph 30 shall survive any termination of this Lease.

(e) Landlord shall have access to, and a right to perform inspections and tests of, the Premises to determine Tenant's compliance with Environmental Requirements, its obligations under this Paragraph 30, or the environmental condition of the Premises. Access shall be granted to

Landlord upon Landlord's prior notice to Tenant and at such times so as to minimize, so far as may be reasonable under the circumstances, any disturbance to Tenant's operations. Such inspections and tests shall be conducted at Landlord's expense, unless such inspections or tests reveal that Tenant has not complied with any Environmental Requirement, in which case Tenant shall reimburse Landlord for the reasonable cost of such inspection and tests. Landlord's receipt of or satisfaction with any environmental assessment in no way waives any rights that Landlord holds against Tenant. Tenant shall promptly notify Landlord of any communication or report that Tenant makes to any governmental authority regarding any possible violation of Environmental Requirements or release or threat of release of any Hazardous Materials onto or from the Premises. Tenant shall, within five (5) days of receipt thereof, provide Landlord with a copy of any documents or correspondence received from any governmental agency or other party relating to a possible violation of Environmental Requirements or claim or liability associated with the release or threat of release of any Hazardous Materials onto or from the Premises.

(f) In addition to all other rights and remedies available to Landlord under this Lease or otherwise, Landlord may, in the event of a breach of the requirements of this Paragraph 30 that is not cured within thirty (30) days following notice of such breach by Landlord, require Tenant to provide financial assurance (such as insurance, escrow of funds or third party guarantee) in an amount and form satisfactory to Landlord. The requirements of this Paragraph 30 are in addition to and not in lieu of any other provision in the Lease.

31. **Rules and Regulations**. Tenant shall, at all times during the Lease Term and any extension thereof, comply with all reasonable rules and regulations at any time or from time to time established by Landlord covering use of the Premises and the Property. The current rules and regulations are attached hereto. In the event of any conflict between said rules and regulations and other provisions of this Lease, the other terms and provisions of this Lease shall control. Landlord shall not have any liability or obligation for the breach of any rules or regulations by other tenants in the Property.

32. **Security Service**. Tenant acknowledges and agrees that, while Landlord may (but shall not be obligated to) patrol the Property, Landlord is not providing any security services with respect to the Premises and that Landlord shall not be liable to Tenant for, and Tenant waives any claim against Landlord with respect to, any loss by theft or any other damage suffered or incurred by Tenant in connection with any unauthorized entry into the Premises or any other breach of security with respect to the Premises.

33. **Force Majeure**. Landlord shall not be held responsible for delays in the performance of its obligations hereunder when caused by strikes, lockouts, labor disputes, acts of God, inability to obtain labor or materials or reasonable substitutes therefor, governmental restrictions, governmental regulations, governmental controls, delay in issuance of permits, enemy or hostile governmental action, civil commotion, fire or other casualty, and other causes beyond the reasonable control of Landlord ("Force Majeure").

34. **Entire Agreement**. This Lease constitutes the complete and entire agreement of Landlord and Tenant with respect to the subject matter hereof. No representations, inducements, promises or agreements, oral or written, have been made by Landlord or Tenant, or anyone acting on behalf of Landlord or Tenant, which are not contained herein, and any prior agreements, promises, negotiations, or representations are superseded by this Lease. This Lease may not be amended except by an instrument in writing signed by both parties hereto.

35. **Severability**. If any clause or provision of this Lease is illegal, invalid or unenforceable under present or future laws, then and in that event, it is the intention of the parties hereto that the remainder of this Lease shall not be affected thereby. It is also the intention of the parties to this

Lease that in lieu of each clause or provision of this Lease that is illegal, invalid or unenforceable, there be added, as a part of this Lease, a clause or provision as similar in terms to such illegal, invalid or unenforceable clause or provision as may be possible and be legal, valid and enforceable.

36. **Brokers**. Tenant represents and warrants that it has dealt with no broker, agent or other person in connection with this transaction and that no broker, agent or other person brought about this transaction, other than the broker, if any, set forth on the first page of this Lease, and Tenant agrees to indemnify and hold Landlord harmless from and against any claims by any other broker, agent or other person claiming a commission or other form of compensation by virtue of having dealt with Tenant with regard to this leasing transaction.

37. **Miscellaneous**.

(a) Any payments or charges due from Tenant to Landlord hereunder shall be considered rent for all purposes of this Lease.

(b) If and when included within the term "Tenant," as used in this instrument, there is more than one person, firm or corporation, each shall be jointly and severally liable for the obligations of Tenant.

(c) All notices required or permitted to be given under this Lease shall be in writing and shall be sent by registered or certified mail, return receipt requested, or by a reputable national overnight courier service, postage prepaid, or by hand delivery and, if to Tenant, addressed to Tenant at the address for Tenant noted on the first page of this Lease, and if to Landlord, addressed to Landlord at 3450 Monte Villa Parkway, Bothell, Washington 98021, Attn: Vice President, Finance. Either party may by notice given aforesaid change its address for all subsequent notices. Except where otherwise expressly provided to the contrary, notice shall be deemed given upon delivery.

(d) Except as otherwise expressly provided in this Lease or as otherwise required by law, Landlord retains the absolute right to withhold any consent or approval.

(e) At Landlord's request from time to time Tenant shall furnish Landlord with true and complete copies of its most recent annual and quarterly financial statements prepared by Tenant or Tenant's accountants and any other financial information or summaries that Tenant typically provides to its lenders or shareholders. Should Tenant have an annual audit by an independent certified public accountant, Tenant shall provide a copy of such statement within ninety (90) days after the end of Tenant's fiscal year. Landlord shall hold such financial statements and information in confidence, and shall not disclose the same except: (i) to Landlord's lenders or potential lenders, (ii) to potential purchasers of all or a portion of the Property, (iii) to attorneys, accountants, consultants or other advisors, (iv) otherwise as reasonably necessary for the operation of the Property or administration of Landlord's business or (v) if disclosure is required by any judicial or administrative order or ruling.

(f) This Lease shall not be filed by or on behalf of Tenant in any public record; provided, however, that either party may file a copy of this lease in order to comply with the rules and regulations promulgated by the U.S. Securities and Exchange Commission. Landlord may prepare and file, and upon request by Tenant, the parties will execute a memorandum of the Option rights set forth in Section 40 below.

(g) Each party acknowledges that it has had the opportunity to consult counsel with respect to this Lease, and therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto.

(h) The submission by Landlord to Tenant of this Lease shall have no binding force or effect, shall not constitute an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution of this Lease by both parties.

(i) Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. The captions inserted in this Lease are for convenience only and in no way define, limit or otherwise describe the scope or intent of this Lease, or any provision hereof, or in any way affect the interpretation of this Lease.

(j) Any amount not paid by Tenant within five (5) days after its due date in accordance with the terms of this Lease shall bear interest from such due date until paid in full at the lesser of the highest rate permitted by applicable law or fifteen percent (15%) per year. It is expressly the intent of Landlord and Tenant at all times to comply with applicable law governing the maximum rate or amount of any interest payable on or in connection with this Lease. If applicable law is ever judicially interpreted so as to render usurious any interest called for under this Lease, or contracted for, charged, taken, reserved, or received with respect to this Lease, then it is Landlord's and Tenant's express intent that all excess amounts theretofore collected by Landlord be credited on the applicable obligation (or, if the obligation has been or would thereby be paid in full, refunded to Tenant), and the provisions of this Lease immediately shall be deemed reformed and the amounts thereafter collectible hereunder reduced, without the necessity of the execution of any new document, so as to comply with the applicable law, but so as to permit the recovery of the fullest amount otherwise called for hereunder.

(k) Construction and interpretation of this Lease shall be governed by the laws of the state of Oregon, excluding any principles of conflicts of laws.

(l) Time is of the essence as to the performance of Tenant's obligations under this Lease.

(m) All exhibits and addenda attached hereto are hereby incorporated into this Lease and made a part hereof. In the event of any conflict between such exhibits or addenda (other than the rules and regulations) and the terms of this Lease, such exhibits or addenda shall control. In the event of a conflict between the rules and regulations attached hereto and the terms of this Lease, the terms of this Lease shall control.

(n) If either party should prevail in any litigation instituted by or against the other related to this Lease, the prevailing party, as determined by the court, shall receive from the non-prevailing party all costs and reasonable attorneys' fees (payable at standard hourly rates) incurred in such litigation, including costs on appeal, as determined by the court.

38. **Limitation of Liability of Landlord's Partners, and Others** . Tenant agrees that any obligation or liability whatsoever of Landlord which may arise at any time under this Lease, or any obligation or liability which may be incurred by Landlord pursuant to any other instrument, transaction, or undertaking contemplated hereby, shall not be personally binding upon, nor shall resort for the enforcement thereof be had to the property of the constituent partners of Landlord or any of their respective directors, officers, representatives, employees or agents, regardless of whether such obligation or liability is in the nature of contract, tort, or otherwise.

39. **Easements; CC&R's**. Landlord reserves to itself the right, from time to time, to grant such easements, rights and dedications that Landlord deems necessary or desirable, and to cause the recordation of parcel maps, easement agreements and covenants, conditions and restrictions, so long as such easements, rights, dedications, maps and covenants, conditions and restrictions do not unreasonably interfere with the permitted use of the Premises by Tenant. Tenant shall sign any of the aforementioned documents upon request of Landlord and failure to do so shall constitute a material breach of this Lease.

40. **Option to Purchase; Rights of First Refusal.**

(a) **Option to Purchase.** Provided no uncured default by Tenant of any of the provisions or covenants of this Lease exists at the time the right afforded Tenant would otherwise arise, Tenant shall be afforded an option to purchase the Building and Landlord's interest in the Ground Lease for the Property (the "Option Property") during the Term of this Lease (the "Option") on the terms set forth in this paragraph. The Option Price for the Option Property shall be Two Million Dollars ($2,000,000.00) until February 28, 2015 and shall increase by One Hundred Thousand Dollars ($100,000.00) on March 1, 2015 and shall increase an additional One Hundred Thousand Dollars ($100,000.00) on March 1, 2016 through the remainder of the initial Lease Term. In the event that Tenant exercises its option to extend the Lease Term as provided in Paragraph 41 below, the Option Price for the Option Property shall increase an additional One Hundred Thousand Dollars ($100,000.00) on the first day of the extension term. Tenant shall provide Landlord ninety (90) days written notice of its exercise of the Option, together with an earnest money deposit of $20,000.00 (the "Option Deposit"). Tenant shall have sixty (60) days from the date of Landlord's receipt of the Option Notice and Option Deposit to conduct such studies, tests and investigations of the Option Property as Tenant shall deem necessary, in its exclusive discretion, to determine the suitability of the Option Property for Tenant's anticipated use. With respect to any inspection or testing that is invasive or involves removing or demolishing any portion of the Option Property or disturbing any portion of the Option Property leased to a third party, Tenant must first submit to Landlord a written plan for entering the spaces of such third parties and for any such invasive testing which shall include a plan to deal with any hazardous materials that may be encountered during such testing, and Tenant may not proceed with any such invasive testing unless Landlord has approved of Tenant's plan in writing (which approval may be withheld by Landlord in its sole discretion). Tenant shall conduct any such invasive testing in strict accordance with the plan approved by Landlord. Tenant shall protect, defend, indemnify, and hold Landlord and Landlord's agents and employees harmless for, from and against any claims, liabilities, damages, liens, attorneys' fees, penalties, demands, causes of actions and suits of any nature whatsoever arising out of the inspection of and/or entry onto the Option Property by Tenant, its agents, employees or contractors. This indemnity includes an obligation of Tenant to reimburse Landlord for any and all damage Tenant may cause to the Option Property in connection with Tenant's inspection and this indemnity shall survive the closing or termination of this Lease. At any time during said sixty (60) day period, Tenant may terminate its Option to purchase by written notice thereof to Landlord, in which event the Option Deposit shall be returned to Tenant, and the Option shall be extinguished. In the event Tenant does not terminate the Option within said sixty (60) day period, the Option Deposit shall be non-refundable, and the closing of the sale of the Option Property shall occur within thirty (30) days after the date Tenant has waived (or is deemed to have waived) Tenant's right to terminate such option due to Tenant's diligence review of the Option Property. It shall be a condition to closing that the City of Corvallis and Lender, if required by Lender's loan documents, approve of the assignment of the Ground Lease to Tenant at closing. At closing, the Option Price shall be paid to Landlord in immediately available funds at Closing, with a credit for the Option Deposit Amount. The Option Property shall be conveyed by Landlord to Tenant AS IS, where is and with all faults by a special warranty deed free and clear of all monetary encumbrances other than taxes and assessments and any amounts payable under the CC&Rs, the Ground Lease and similar agreements. Landlord shall also assign to Tenant its interest in the Ground Lease and any warranties then still in effect pertaining to the Option Property. Landlord shall pay the cost of an owner's standard policy of title insurance. Tenant

shall pay all recording costs. All escrow costs shall be shared equally by Landlord and Tenant. Should Tenant fail to exercise its Option as provided herein, the option privilege shall be extinguished. Should Tenant exercise its option, but fail to close the purchase of the Option Property through no fault of Landlord, Landlord shall be entitled to keep the Option Deposit.

(b) **Right of First Refusal to Purchase.** If, during the Term, Landlord receives a bona fide offer for sale of the Option Property that Landlord finds acceptable (the "Offer"), Landlord shall provide a copy of such offer to Tenant (the "First Refusal Notice"). Tenant shall have ten (10) business days after receipt of the First Refusal Notice in which to either match the terms and conditions of the Offer in writing (the "ROFR") or to exercise its Option above. If Tenant matches the Offer, Tenant shall proceed to closing upon the terms and conditions in the Offer. If Tenant instead exercises its Option, the sale shall proceed to closing on the terms and conditions set forth in Paragraph 40(a) above. If Tenant does not either match the Offer or exercise its option within the 10-business day period and Landlord completes the sale in accordance with the Offer, Tenant's Option and First Refusal rights in this Paragraph 40 shall terminate and be of no further force and effect.

(c) **Right of First Refusal to Lease.** If at any time during the Term, Landlord receives a bona fide offer to lease (the "Lease Offer") the adjacent 10,973 rentable square feet located adjacent to the Premises (the "Adjacent Premises"), Landlord shall provide written notice of the terms of such Lease Offer (the "Lease Offer Notice") to Tenant. Tenant may elect to lease the Adjacent Premises upon the terms and conditions set forth in the Lease Offer by providing written notice to Landlord within ten (10) business days after receipt of the Lease Offer Notice. The parties shall thereafter execute an amendment to the Lease incorporating the Adjacent Premises into the Premises on the terms set forth in the Lease Offer. Landlord shall not be required to extend the term of this Lease due to the Lease Offer terms, but may elect to do so. In the event Tenant does not exercise its rights to lease the Adjacent Premises within the 10-business day period, Landlord may lease the Adjacent Premises to the party who submitted the Lease Offer, provided that Landlord shall not allow the Adjacent Premises to be used for purposes that would substantially interfere with Tenant's use of the Premises for the manufacturing of semiconductors.

(d) For purposes of this Paragraph 40, the Option, ROFR and Right to Lease shall be collectively referred to as the "Option Rights" and individually as an "Option Right". Tenant shall have no right to exercise an Option Right, notwithstanding any provision hereof to the contrary, (a) during the time commencing from the date Landlord gives to Tenant a notice of default pursuant to this Lease and continuing until the noncompliance alleged in said notice of default is cured, or (b) during the period of time commencing on the day after a monetary obligation to Landlord is due from Tenant and unpaid (without any necessity for notice thereof to Tenant) and continuing until the obligation is paid, or (c) if Landlord has given to Tenant one or more notices of default under this Lease, whether or not the defaults are cured, or Tenant has been late on three or more occasions in the payment of a monetary obligation to Landlord (without any necessity for notice thereof to Tenant), during the 12 month period of time immediately prior to the time that Tenant attempts to exercise the Option Right, or (d) if Tenant has committed any non-curable breach, or is otherwise in default of any of the terms, covenants or conditions of this Lease.

(e) The period of time within which an Option Right may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Option Right because of the provisions of Paragraph 40(d) above.

(f) All Option Rights of Tenant under this Paragraph 40 shall terminate and be of no further force or effect, notwithstanding Tenant's due and timely exercise of an Option Right, if, after such exercise, (i) Tenant fails to pay to Landlord a monetary obligation of Tenant for a period of five

(5) days after such obligation becomes due (without any necessity of Landlord to give notice thereof to Tenant), or (ii) Tenant fails to commence to cure any other default under this Lease within ten (10) days after the date that Landlord gives notice to Tenant of such default and/or Tenant fails thereafter to diligently prosecute said cure to completion within thirty (30) days after the date of such notice, or (iii) Landlord gives to Tenant one (1) or more notices of default under this Lease, or Tenant is late on one (1) or more occasions in the payment of a monetary obligation to Landlord (without any necessity of notice thereof to Tenant), whether or not the defaults are cured, or (iv) Tenant has committed any incurable breach, or is otherwise in default of any of the terms, covenants and conditions of this Leases.

41. **Option to Extend**. Provided no uncured default by Tenant of any of the provisions or covenants of this Lease exists, Tenant shall have the option to extend this Lease for an additional twelve (12) month period by written notice to Landlord, given not less than twelve (12) months prior to the last day of the then expiring term of the Lease. Giving of such notice shall be sufficient to make the Lease binding for the extension term without further act of the parties. The terms and conditions of the Lease for the extension term shall be identical with the original term, except for the Monthly Base Rent and there shall be no further options to renew. The Monthly Base Rent for the extension term is set forth in the Basic Lease Provisions.

(*Signature page follows*)

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the day and year first above written.

TENANT:

PERPETUA POWER SOURCE TECHNOLOGIES, INC.,
an Oregon corporation

By: /s/ Nicholas Fowler
Its: CEO

LANDLORD:

AVI BIOPHARMA, INC.,
an Oregon corporation

By: /s/ Christopher Garabedian
Its: Chief Executive Officer

EXHIBIT A

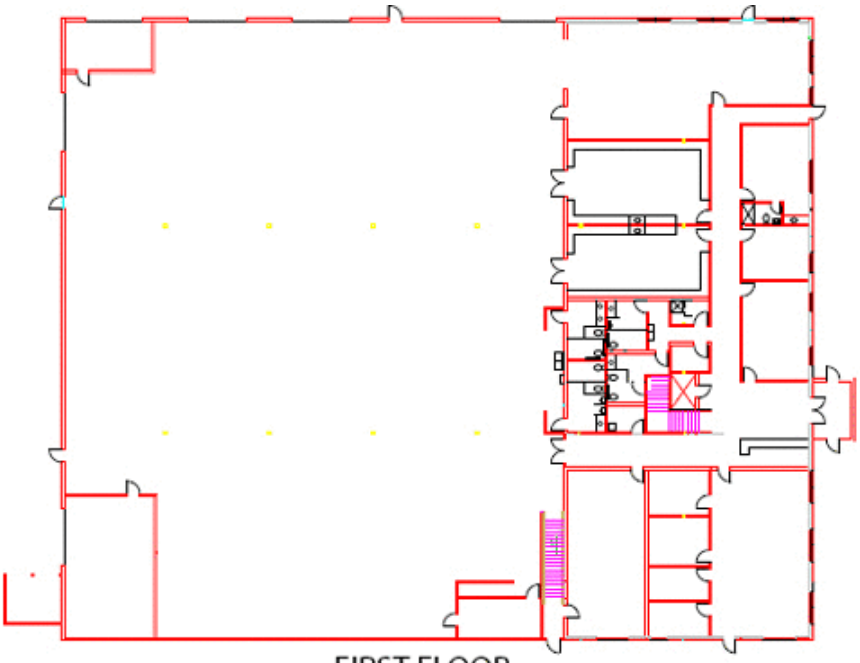
Legal Description of Property

Beginning at a point on the north right of way of SW Airport Ave., a 60’ right of way, said point being N 50°05’36”E, 1879.06 feet from the southeast corner of the Alfred Rhinehart Donation Land Claim No. 73, in Township 12 South, Range 5 West, Willamette Meridian, Benton County, Oregon; thence N 00°05’00”E, 320.00 feet; thence WEST, 270.00 feet; thence N 00°05’38”E, 631.00 feet; thence N 89°59’00”E, 270.53 feet; thence S 00°05’00”W, 354.50 feet; thence N 89°59’00”E, 431.73 feet to a point on the west right of way of SW Plumley Street, a 70 foot right of way; thence along said west right of way S 00°05’00”W, 7.16 feet; thence S 05°19’30”W 290.32 feet; thence SOUTH, 299.80 feet to the north right of way of said SW Airport Ave.; thence WEST, 406.12 feet to the point beginning. Containing 9.57 acres more or less.

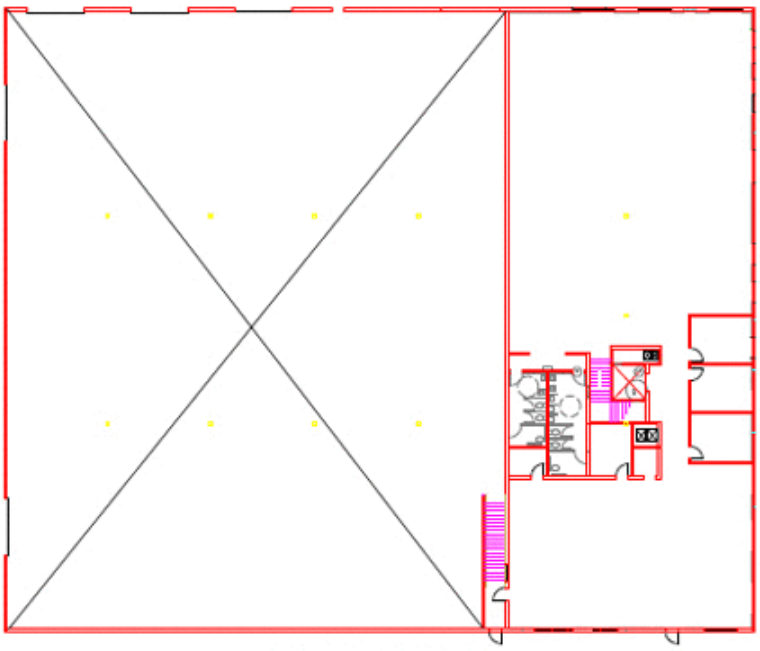
EXHIBIT B

Floor Plan

[Attached]



FIRST FLOOR



SECOND FLOOR

EXHIBIT C

List of Initial Tenant Improvements

Tenant improvements to AVI Biopharma Building at 1749 Airport Road

11/7/2011, mjh

1. Excavate and install 5" thick, rebar reinforced concrete pad on North side of building., approximately (estimated dimensions: 20' × 40')
2. Install on concrete pad:
    a. One 7000 cfm fume exhaust scrubber
    b. One water treatment system (two tanks, associated instrumentation and pumps)
    c. One skid mounted DI water supply system
    d. One nitrogen dewer
    e. One chiller for process cooling water
    f. One dust collection system
    g. Potentially, a set of compressed gas bottle holders
    h. Exterior screening/fencing
    i. Potentially, a partial roof for protection of some of the components against the weather
3. Slight modifications to air handler for cleanroom
4. Addition of piping/utility racks as needed in cleanroom
5. Addition of overhead distribution of exhaust ducting in cleanroom
6. Walls, ceilling, appropriate floor covering and lighting for a separate production room just west of the current cleanroom
7. Electrical wiring and distribution which feeds all of the pad mounted equipment and all of the production tooling in the cleanroom and the new room adjacent to the current cleanroom
8. Appropriate piping and exhaust ducting to connect the pad mounted equipment
9. Modification to one of the current ceiling exhaust fan ducting (RTU-5) to exhaust production equipment in production room of item 3
10. Potential changes to some utilities for current machine shop space in southwest corner of building
11. Slight modification/addition to current IT infrastructure to allow data capture for critical production tooling
12. Addition of workstations for prototype tool development in open area south of new production room
13. Minor modifications, as necessary to support production equipment, of CDA and Process Vacuum system distribution networks

EXHIBIT D

Environmental Questionnaire

[Attached]

EXHIBIT D

Environmental Questionnaire
[Perpetua to complete]

FOR OFFICE USE ONLY:

Proposed Lease Commencement Date: 11-15.2011

PRE-LEASING ENVIRONMENTAL EXPOSURE QUESTIONNAIRE
(To be completed prior to Lease Approval)

Property Address: 1749 SW Airport Ave. Corvallis, OR

Proposed Tenant: Perpetua Power Source Technologies, Inc

(Include full legal name of proposed tenant and any d/b/a)

Current Address: 4314 SW Research Way, Corvallis, OR

Description of Proposed Use of Property: Corporate headquarters and product development/manufacturing center.

PLEASE ANSWER THE FOLLOWING QUESTIONS ACCURATELY AND FULLY, ATTACHING ADDITIONAL PAGES IF NECESSARY. YOUR RESPONSES TO THIS QUESTIONNAIRE, INCLUDING ANY AND ALL ATTACHMENTS, SHALL BE INCORPORATED AS REPRESENTATIONS AND WARRANTIES IN THE LEASE WHEN EXECUTED, AND INCORRECT, MISLEADING OR MATERIALLY INCOMPLETE RESPONSES SHALL BE DEEMED A BREACH OF SAID LEASE.

1. Will any of the following chemicals, petroleum products or hazardous materials be made, used, placed, or stored on the property in quantities greater than the minimum quantity listed in column (1) below? If yes, please mark column(s) (2), (3), and/or (4) as applicable.

Categories of Chemicals	(1) Minimum Quantity	(2) Made	(3) Used	(4) Placed	(5) Stored
Solvents, Degreasers	1 Gallon		x		x
Paint Thinners/Remover	1 Gallon				
Paint	5 Gallons				
Oil (New)	5 Gallons				
Gasoline	1 Gallon				
Antifreeze	5 Gallons				
Other Automotive Fluids	1 Gallon				
Diesel Fuel	5 Gallons				

Heavy (Toxic) Metal Containing Compounds	1 Pound		x	x	x
Liquid Plastics/Activators	1 Gallon		x	x	x
Flammable Gases	20 Cu Ft				
Toxic Gases	20 Cu Ft				
Acids	1 Gl/5 Lb		x		x
Bases (soda, ash, lye, etc.)	1 Gl/5 Lb		x		x
Other Flammable Materials	1 Gl/5 Lb				
Other Corrosive Materials	1 Gl/5 Lb				
Other Toxic Materials	1 Gl/5 Lb				
Other Reactive Materials	1 Gl/5 Lb				
Liquid Hazardous Waste	1 Gallon				
Solid Hazardous Waste	1 Pound				

1.1 If required for our operations, please provide Landlord a copy of your Hazardous Materials business Management Plan.

As per EPA definition (see Federal Regulation 40 CFR 355), Perpetua doesn't use any Hazardous Materials. As such, we don't have a formal Hazard Materials Management Plan.

	Yes	No
1.2 Do your operations require H-occupancy storage or other special constructions?		x

If yes, please explain:

2. Will any of the following structures be used on the property? If yes, describe the contents of each. x

Feature	Contents		
Underground Tank			
Above-ground Tank	Waste water stream for treatment	x	
Clarifier			
Sump	Waste water stream for treatment	x	
Trench			
Waste Pile			
Chemical Piping	Process gas piping (N2. Argon)	x	
Floor Drain			
Other			

2.1 Please describe plans for secondary containment and leak monitoring. The waste water treatment system will be housed on a pad which has a secondary containment berm surrounding it.

3. Will any hazardous wastes or liquid wastes be generated by on site operations or brought on to the property? x

If yes, complete the following:

3.1 Identify each such hazardous waste or liquid waste.

No hazardous wastes, as defined by the EPA. Liquid waste will be generated 1by the semiconductor process flow but will be scrubbed before leaving the building. Permits from the City of Corvallis for this process will be procured. Solid wastes in the form of small particles of non-toxic metals deposited onto our semi-conductor products will be stored in drums and sent to recycling. Again, this will be permitted through the City of Corvallis.

3.2 Describe onsite storage, including secondary containment, and/or treatment.

Secondary containment for the liquid (water) effluent was described in 2.1. We will also have a set of solvent exhaust connected metal cabinets for storage of process chemicals.

3.3 Describe your plans for disposal of hazardous wastes or liquid waste including off-site disposal.

Recycling of the semi-conductor metals will be handled by a vendor familiar with the materials under our supervision and direction. Some proprietary process chemicals will also be recycled, again under the same guidelines as above.

4. Will operations result in any wastewater discharges to the sewer? x

Will operations result in any wastewater discharges to locations other than the sewer (including storm drain)? x

If yes, describe each wastewater stream and plans for handling wastewater discharges:

A City of Corvallis permitted acid waste treatment system will be operated. The basic function of this system is to filter minute quantities of solids out of the liquid waste stream via a settling tank, decant the liquid (water) off of the settling tank, and treat the effluent to neutralize the pH as per City of Corvallis regulations.

4.1 Have you performed any testing or analysis of wastewater discharges or other wastewater effluent from your current facility? x

If yes, attach the results of any such testing or analysis.

4.2 Will your operations require any stormwater discharge permits?

If yes, describe:

No storm water permits have been requested during the City of Corvallis' initial project review nor are any anticipated as the permitting process proceeds.

5.	Will activities on the property require warnings to be given to workers or visitors on the Leased Premises or the surrounding community?		x
	If yes, please describe how you will provide such communications or warnings.		
6.	Will operations result in any air emissions (including dust)?		x
	If yes, describe: Perpetua has provided the Oregon DEO with information regarding all of our processes which relate to airborne emissions, including dust generation from our production processes. The DEO has released Perpetua from the need for a Air Discharge Permit given our intention of installing a water curtain fume exhaust scrubber and dust collection system.		
	6.1 Will permits from the Southern Coast Air Quality Management District be required?		x
7.	Will operations result in air emissions which include hazardous or toxic air pollutants?		x
	7.1 If yes, will any public notice or disclosure be required?		
8.	Will operations be subject to Risk Management & Preview Planning requirements or other risk reduction requirements?		x
9.	Will your operations involve any on-site vehicle or equipment maintenance, repair or cleaning, including but not limited to oil changes, oil filter changes, brake pad replacement, battery changes, radiator flushing, radiator fluid replacement, and equipment, and equipment wash down and cleaning?		x
	If yes, describe all such maintenance:		
	9.1 Will these on-site vehicles or equipment use batteries?	x	
	If yes, describe battery storage method: We may choose to operate an electric forklift for movement of production materials. The maintenance of this forklift will be performed by a qualified professional and will take place offsite.		
10.	Will your operations include a machine shop?	x	
	If yes, describe all operation: Although not a certainty at this point we may elect to install machining equipment to aid us in fabrication of fixtures and tooling for our production processes. If so, we will likely have a metal lathe, a vertical milling machine, a bandsaw, a drill press, a grinder, and various other metal working tools. We do not plan to do any welding, plating or other associated activities.		

11. Will your operations include any metal plating or metal fabrication?	x	

If yes, describe:

See 10 above. Also, our semi-conductor process includes deposition of small amounts of proprietary metals onto our semi-conductor substrates. This operation will be fully permitted.

12. Will your operations include the use of solvents?	x	

If yes, describe:

Solvents will be used to lift photolithographic masks off of our semi-conductor substrates and to clean various process equipment. These solvents and their usage have been cleared by the DEO and are in the process of being permitted by the City of Corvallis.

13. Has your present facility or operation ever been the subject of an x environmental investigation, an environmental enforcement action, or permit revocation proceeding?		x

If yes, describe:

14. Have you ever been identified as a potentially responsible party for any environmental cleanup, compliance or abatement proceedings? ____ x

If yes, describe:

15. Have you ever received a notice of violation or notice to comply from any environmental regulatory agency within the past five years? ____ x

If yes, describe:

16. Have you had any complaints from neighbors relating to noise, odor, air emissions, or dust at your present facility? ____ x

If yes, describe:

16.1 Have you had any complaints relating to hazardous materials handling, storage, treatment or disposal from neighbors at your present facility? ____ ____

17. Will the proposed use of the property require the filing of any environmental x reports or other documents to any agencies? x ____

We are working with the City of Corvallis Waste Water Disposal unit to define a waste water treatment sampling protocol. The initial vision is that we would sample our waste stream 2 or 3 times in the first month of operation and then analyze and report the result. Once we prove the operation of our system. it is anticipated that sampling for verification will limited to annual or semiannual events.

18. Attach copies of all Material Safely Data Sheets ("MSDS") for all chemicals you intend to use, sore, or handle on the property.

19. Has an Environmental Audit been conducted at your present facility? (If yes, attach a copy of any report prepared in connection with any such audit.) ____ x

20. Please provide the Landlord your Emergency Response Plan and any contingency or emergency plans for the property in case of an accidental release of hazardous materials.

As per EPA definition (see Federal Regulation 40 CFR 355), Perpetua doesn't use any Hazardous Materials. As such, we don't have a formal Emergency Response Plan.

21. Identify the name, title and qualifications/experience of person responsible for your environmental, health and safety program:

Name: Paul McCleland

Title: CTO

Qualifications/experience: Paul has been a facilities engineer and a semi-conductor process engineer for over 30 years at various private institutions.

22. Name and telephone number of person to contact for additional information:

Name: Mark Hauck

Title:: Mechanical Engineer

Telephone Number: 541-760-9130

23. Please provide any additional information/comments concerning your environmental compliance program and environmental compliance history:

[Signatures on following page]

The undersigned hereby certifies that the information above is correct and complete.

PERPETUAL POWER SOURCE TECHNOLOGIES
Name of Proposed Tenant

Name: 

Title: MECHANICAL ENGINEER

Date: 11/18/2011

EXHIBIT E

Rules and Regulations

In the event of a conflict between the following Rules and Regulations and the terms of the Lease to which this Addendum is attached, the terms of the Lease shall control.

1. The sidewalk, entries, and driveways of the Property shall not be obstructed by Tenant, or its agents, or used by them for any purpose other than ingress and egress to and from the Premises.

2. Tenant shall not place any objects, including antennas, outdoor furniture, etc., in the parking areas, landscaped areas or other areas outside of its Premises, or on the roof of the Property.

3. Except for seeing-eye dogs and other assistance animals required by law to be allowed, no animals shall be allowed in the offices, halls, or corridors in the Property.

4. Tenant shall not disturb the occupants of the Property by the use of any radio or musical instrument or by the making of loud or improper noises.

5. If Tenant desires telegraphic, telephonic or other electric connections in the Premises, Landlord or its agent will direct the electrician as to where and how the wires may be introduced; and, without such direction, no boring or cutting of wires will be permitted. Any such installation or connection shall be made at Tenant's expense.

6. Tenant shall not install or operate any steam or gas engine or boiler, or other mechanical apparatus in the Premises, except as specifically approved in the Lease. The use of oil, gas or inflammable liquids for heating, lighting or any other purpose is expressly prohibited. Explosives or other articles deemed extra hazardous shall not be brought into the Property.

7. Parking any type of recreational vehicles is specifically prohibited on or about the Property. Except for the overnight parking of operative vehicles or as expressly permitted in the Lease, no vehicle of any type shall be stored in the parking areas at any time. In the event that a vehicle is disabled, it shall be removed within 48 hours. There shall be no "For Sale" or other advertising signs on or about any parked vehicle. All vehicles shall be parked in the designated parking areas in conformity with all signs and other markings. All parking will be open parking, and no reserved parking, numbering or lettering of individual spaces will be permitted except as specified by Landlord.

8. Tenant shall maintain the Premises free from rodents, insects and other pests.

9. Landlord reserves the right to exclude or expel from the Property any person who, in the judgment of Landlord, is intoxicated or under the influence of liquor or drugs or who shall in any manner do any act in violation of the Rules and Regulations of the Property.

10. Tenant shall not cause any unnecessary labor by reason of Tenant's carelessness or indifference in the preservation of good order and cleanliness. Landlord shall not be responsible to Tenant for any loss of property on the Premises, however occurring, or for any damage done to the effects of Tenant by the janitors or any other employee or person.

11. Tenant shall give Landlord prompt notice of any needed maintenance that is the responsibility of Landlord under the Lease.

12. Tenant shall not permit storage outside the Premises, including without limitation, outside storage of trucks and other vehicles, or dumping of waste or refuse or permit any harmful materials to be placed in any drainage system or sanitary system in or about the Premises.

13. All moveable trash receptacles provided by the trash disposal firm for the Premises must be kept in the trash enclosure areas, if any, provided for that purpose.

14. No auction, public or private, will be permitted on the Premises or the Property.

15. No awnings shall be placed over the windows in the Premises except with the prior written consent of Landlord.

16. The Premises shall not be used for lodging, sleeping or cooking (other than the incidental use of coffee machines or microwave ovens) or for any immoral or illegal purposes or for any purpose other than that specified in the Lease. No gaming devices shall be operated in the Premises.

17. Tenant shall ascertain from Landlord the maximum amount of electrical current which can safely be used in the Premises, taking into account the capacity of the electrical wiring in the Property and the Premises and the needs of other tenants, and shall not use more than such safe capacity. Landlord's consent to the installation of electric equipment shall not relieve Tenant from the obligation not to use more electricity than such safe capacity.

18. Tenant assumes full responsibility for protecting the Premises from theft, robbery and pilferage.

19. Tenant shall not install or operate on the Premises any machinery or mechanical devices of a nature not directly related to Tenant's ordinary use of the Premises and shall keep all such machinery free of vibration, noise and air waves which may be transmitted beyond the Premises.

20. Tenant shall not introduce, disturb or release asbestos or PCBs onto or from the Premises.

21. Tenant shall at all times conduct its operations in a good and workmanlike manner, employing best management practices to minimize the threat of any violation of Environmental Requirements.

EXHIBIT F

Tenant's Application to DEQ, Any DEQ Amendments, Modifications or Approvals

[Attached]

NOTICE OF INTENT TO CONSTRUCT

FORM AQ104
ANSWER SHEET

FOR DEQ USE ONLY	
Permit Number:	Regional Office:
Application No:	Date Received :

1. Source Number:			
2. Company		**3. Facility Location**	
Legal Name:	Perpetua Power Source Technologies, Inc	Name:	Perpetua Power Source Technology Corporate Headquarters
Ownership type:	C Corp	Plant start date:	3/1/2012
Mailing Address:		Street Address:	
4314 SW Research Way		1749 Airport Ave	
City, State, Zip Code:		City, County, Zip Code:	
Corvallis, OR 97333		Corvallis, OR	
Number of Employees (corporate):	15	Number of Employees (plant site):	15

4. Site Contact Person		**5. Industrial Classification Code(s)**	
Name:	Mark Hauck	SIC:	3629
		NAICS:	335999
Title:			
Mechanical Engineer			
Phone number:	541-760-9130	**6. Type of construction/change:** (see instructions)	
Fax number:	503-922-3169	Type 1	
e-mail address:	mjh@perpetuapower.com		

7. Signature

I certify that the information contained in this notice, including any schedules and exhibits attached to the notice, are true and correct to the best of my knowledge and belief.

Name of official (Printed or Typed)	Title of official and phone number
Signature of official	Date

SUBMIT TWO COPIES OF THE COMPLETED NOTICE OF INTENT TO CONSTRUCT TO THE DEPARTMENT REGIONAL OFFICE SHOWN BELOW:

Oregon Department of Environmental Quality
Western Region
750 Front Street NE, Suite 120
Salem, OR 97301

Construction Information

8. Description of proposed construction:

Currently, Perpetua is operating out of a leased space at 4314 Research Way in Corvallis, OR. At this site, Perpetua is depositing Bismuth, Antimony, Tellurium, and small amounts of Selenium onto polyimide substrates to produce thermoelectric generation devices. The fabrication processes include standard semiconductor industry physical vapor deposition (PVD) and lithographic practices. To facilitate expansion, Perpetua is planning to relocate to a new facility with a more suitable production fabrication space.

Fabrication of Perpetua's products require the use of multiple solvents, developers, and photoresists during the lithographic processes. Solvents used are N-Methylpyrrolidone (NMP) and Isopropyl Alcohol (IPA). Developers used are 1% sodium carbonate/sodium hydroxide. Photoresists used are the AZ family of photoresists. An acid waste treatment system will neutralize the liquid waste stream such that any solids will be captured in a settling tank and the bulk of the NMP will be recycled. A water wash fume exhaust scrubber will capture any vapor phase and particulate materials which are not recycled. The effluent from this scrubber will be directed to the input of the acid waste treatment system to be neutralized.

To handle any particulates created during the PVD processes, a filtered, bulk dust collection system will exhaust key locations in the deposition process to capture bulk Tellurium and Bismuth particulates for direction to a recycling/reuse/disposal process.

Construction plans: Perpetua aims to finalize preliminary permits by the end of October, 2011. Detailed engineering design efforts will directly follow preliminary permit review, with the intent of completing design work by the end of November. Once the engineering work is done and formal permits have been procured, construction bids will be sought, with the deadline for bidding to be January 15th, 2012. Construction will proceed directly after contracts have been awarded. Construction is set to complete by February 26th, 2012.

9. Will the construction increase the capacity of the facility? Y If yes, how much?

Currently, we are producing about 30 units/month. The new facility should produce around 30,000 units/month.

10. Will the construction increase pollutant emissions? N If yes, how much (see question 18)?

11. Will the construction cause new pollutant emissions? N If yes, which pollutants and how much?

12. Estimated timing of construction.

a.	Commence date:	12/1/2011
b.	Begin date:	1/15/2012
c.	Completion date:	2/26/2012

13. Will tax credits be requested once construction is completed? Y

14. Attach relevant forms from Form Series AQ200, Device/Process Forms.

15. Attach relevant forms from Form Series AQ300, Control Device Description Forms, if applicable.

16. Attach process flow diagram.

17. Attach a city map or drawing showing the facility location.

18. If applicable, attach a Land Use Compatibility Statement.

Emissions Data

19. Pre-and Post-Construction emissions summary data

a. Emissions Point	b. Pollutant	c. Pre-Construction Emissions		d. Post-Construction Emissions	
		short-term (specify unit)	Annual (tons/year)	short-term (specify unit)	Annual (tons/year)

Instructions

1. Specify the name of the solvent and the chemical constituents (refer to the material safety data sheet or technical data sheet provided by the manufacturer.
2. Enter the amount of the solvent that is volatile as a percentage. Typically, solvents are 100% volatile. Enter the actual amount if this is not true for the solvent used at your facility. This information can be obtained from material safety data sheets (MSDS) or technical data sheets provided by the manufacturer or vendor.
3. Describe what process the solvent is used for at the facility. Typical uses are parts cleaning, spray gun cleaning, thinners, carrying agents.
4. Describe the method for using the solvent at the facility (e.g., dip tank, spray gun, wipe-off, brush, etc.).
5. Is any of the solvent recovered and disposed of off site?
6. Describe how the solvent is stored.
7. Describe any work practices used to minimize pollutant emissions.
8. Are there any control devices, such as carbon bed absorber, used to capture the solvent emissions? Indicate yes or no and list the control device identification numbers. Complete the appropriate AQ300 series form for each control device.

FORM AQ214
ANSWER SHEET

SOLVENT USAGE

Facility Name: Perpetua Power Source Technologies Corporate Headquarters Permit Number:

1.	Solvent name	N-Methylpyrrolidone	Isopropyl Alcohol
2.	Percent volatile	0.032 % (vapor pressure = 0.32mbar)	5.8% (vp = 44mmHg)
3.	Chemical constituents	C(5)H(9)NO	(CH(3))2CHOH
		Carbon, Hydrogen, Nitrogen, Oxygen	Carbon, Hydrogen, Oxygen
4.	Process	Photoresist Rinse	NMP Rinse
5.	Application method	Dip and/or spray	Dip and/or spray
6.	Solvent recovery?	Yes	Yes
7.	Solvent storage	Drum, in ventilated chem storage rm	Drum, in ventilated chem storage rm
8.	Work practices	Gloved handling, usage in fume	Gloved handling, usage in fume
		exhausted environment	exhausted environment
9.	Control device(s) (yes/no?)	Yes	Yes
	Control device ID	Fume Exhaust Scrubber	Fume Exhaust Scrubber

Instructions

1. Specify the name of the solvent and the chemical constituents (refer to the material safety data sheet or technical data sheet provided by the manufacturer.
2. Enter the amount of the solvent that is volatile as a percentage. Typically, solvents are 100% volatile. Enter the actual amount if this is not true for the solvent used at your facility. This information can be obtained from material safety data sheets (MSDS) or technical data sheets provided by the manufacturer or vendor.
3. Describe what process the solvent is used for at the facility. Typical uses are parts cleaning, spray gun cleaning, thinners, carrying agents.
4. Describe the method for using the solvent at the facility (e.g., dip tank, spray gun, wipe-off, brush, etc.).
5. Is any of the solvent recovered and disposed of off site?
6. Describe how the solvent is stored.
7. Describe any work practices used to minimize pollutant emissions.
8. Are there any control devices, such as carbon bed absorber, used to capture the solvent emissions? Indicate yes or no and list the control device identification numbers. Complete the appropriate AQ300 series form for each control device.

FORM AQ214
ANSWER SHEET

SOLVENT USAGE

Facility Name: Perpetua Power Source Technologies Corporate Headquarters Permit Number:

1.	Solvent name	Sodium Hydroxide	AZ 111 xfs
2.	Percent volatile	0.13% (vp = 1mmHg)	0.38% (vp = 2.9mmhG)
3.	Chemical constituents	NaOH	1-Methoxy-2-propanol acetate, 79%
		Sodium, Oxygen, Hydrogen	Cresol novolak resin, 13%
			Alkylether polymer, 4%
			Diazonaphthoquinonsulfonic ester, 3%
4.	Process	Photoresist Developer	Photoresist
5.	Application method	Dip or Spray	Dip or spray
6.	Solvent recovery?	Yes	Yes
7.	Solvent storage	Drum, in ventilated chem storage rm	Drum, in ventilated chem storage rm
8.	Work practices	Gloved handling, fume exhausted dip	Gloved handling, fume exhausted dip
		tank usage,	tank usage
9.	Control device(s) (yes/no?)	Yes	Yes
	Control device ID	Fume Exhaust Scrubber	Fume Exhaust Scrubber

1. Enter the control device identification label (e.g. North Scrubber, Scrubber-1, alpha scrubber, S-1)
2. Enter the processes and/ or devices controlled by this unit. May use ID labels or descriptions.
3. Enter the year the control device was, or will be installed.
4. Enter the manufacturer and model number of the control device.
5. Enter the rated control efficiency, in percent, by pollutant for the control device.
6. Specify the type of wet scrubber (e.g. venturi, packed bed, spray tower, etc).
7. Is the water re-circulated or only passed through the scrubber once?
8. Enter the design water flow rate (gallons/minute).
9. Enter the design water pressure (pounds per square inch gauge).
10. Enter the design inlet gas flow rate (actual cubic feet per minute).
11. Enter the design pressure drop across the scrubber (inches of water).
12. Describe/List any inlet gas pretreatment systems/devices. If the pretreatment systems are separate control devices, complete the appropriate control device description form for each device.
13. Describe any water treatment systems such as settling ponds or chemical additives.

Facility Name: Perpetua Power Source Technologies Corporate Office

Permit Number:

1.	Control Device ID	Acid Exhaust Scrubbr		
2.	Process/Device(s) Controlled	Photolithography		
3.	Year installed	2,012		
4.	Manufacturer/Model No.	KCH Engineer Systems		
5.	Control Efficiency(%)	95%		
6.	Type of scrubber	Verticle		
7.	Is water re-circulated?	Yes		
8.	Design water flow rate (gpm)	75		
9.	Design water pressure (psig)	17.8		
10.	Design inlet gas flow rate (acfm)	5000		
11.	Design pressure drop (inches of water)	5		
12.	Inlet gas pretreatment? (yes/no) If yes, list control device ID and complete a separate control device form	No		
13.	Describe any water treatment systems*	disc to pH control sys		

* Attach additional pages, if necessary.

see attached quote

1. Product and Company Identification

Company
BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932, USA

24 Hour Emergency Response Information
CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP

Molecular formula:	C(5)H(9)NO
Chemical family:	heterocyclic, amides
Synonyms:	NMP TECHNICAL

2. Hazards Identification

Emergency overview

NOT FOR COSMETIC USE

WARNING:

COMBUSTIBLE LIQUID.

Irritating to eyes and skin.

INGESTION MAY CAUSE GASTRIC DISTURBANCES.

A component of this product has been shown to be developmentally toxic in animal studies.
Use with local exhaust ventilation.
Avoid contact with the skin, eyes and clothing.
Wear a NIOSH-certified (or equivalent) organic vapour respirator.
Wear chemical resistant protective gloves.
Wear NIOSH-certified chemical goggles.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.

State of matter: liquid
Colour: clear
Colour: colourless
Odour: mild

Potential health effects

Primary routes of exposure:

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:

Virtually nontoxic by inhalation. Of low toxicity after short-term skin contact. Of low toxicity after single ingestion.

Irritation / corrosion:

Eye contact causes irritation. Skin contact causes irritation.

Chronic toxicity:

Carcinogenicity: Results from a number of long-term carcinogenity studies and short-term tests are available. Taking into account all of the information, there is no indication that the substance itself is carcinogenic.

Reproductive toxicity: As shown in animal studies, the product may cause damage to the testes after repeated high exposures that cause other toxic effects.

Teratogenicity: The substance caused malformations/developmental toxicity in laboratory animals.

Genotoxicity: The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in a test with mammals.

Medical conditions aggravated by overexposure:

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See MSDS section 11 - Toxicological information.

Potential environmental effects

Aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

3. Composition / Information on Ingredients

CAS Number	Content (W/W)	Chemical name
872-50-4	>= 99.8%	N-Methylpyrrolidone
60544-40-3	<= 0.4%	Pyrrolidinone, dimethyl-

4. First-Aid Measures

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

If on skin:

Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Seek medical attention.

If swallowed:

Rinse mouth and then drink plenty of water. Induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

5. Fire-Fighting Measures

Flash point:	196 °F	(ASTM D93)
Autoignition:	245 °C	(DIN 51794)
Lower explosion limit:	1.3%(V)	
Upper explosion limit:	9.5%(V)	
Self-ignition temperature:		not self-igniting

Suitable extinguishing media:

water spray, dry extinguishing media, foam, carbon dioxide

Hazards during fire-fighting:

nitrous gases

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

6. Accidental release measures

Personal precautions:

Wear appropriate respiratory protection. Use personal protective clothing. Ensure adequate ventilation.

Environmental precautions:

This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').

Cleanup:

Spills should be contained, solidified, and placed in suitable containers for disposal.

For small amounts: Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder). Dispose of absorbed material in accordance with regulations.

For large amounts: Pump off product.

7. Handling and Storage

Handling

General advice:

Ensure thorough ventilation of stores and work areas.

Avoid contact with skin and eyes. Wear suitable gloves and eye/face protection.

Protection against fire and explosion:

The product is combustible.

Storage

General advice:

Containers should be stored tightly sealed in a dry place.

8. Exposure Controls and Personal Protection

Advice on system design:

Provide local exhaust ventilation to maintain recommended P.E.L.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour respirator. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Hand protection:

Wear chemical resistant protective gloves., butyl rubber (butyl)—0.7 mm coating thickness, Consult with glove manufacturer for testing data.

Eye protection:

Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists. Safety glasses with side-shields.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Females of childbearing age should not come into contact with the product. Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to minimize contact. Wash soiled clothing immediately. When using do not eat or drink. When using do not smoke. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Form:	liquid	
Odour:	mild, amine-like	
Colour:	clear colourless	
pH value:	8.5 - 10	(100 g/l, 20 °C)
Melting point:	-23.6 °C	(760 mmHg)
Boiling point:	204.3 °C	(760 mmHg)
Vapour pressure:	0.32 mbar	(20 °C)
Density:	1.028 g/cm3	(25 °C) (DIN 51757)
Partitioning coefficient n-octanol/water (log Pow):	-0.46	(25 °C) (OECD Guideline 107)
Viscosity, dynamic:	1.796 mPa.s	(20 °C)
Solubility in water:		miscible
Solubility (qualitative):	miscible solvent(s): organic solvents,	
Molar mass:	99.00 g/mol	

10. Stability and Reactivity

Substances to avoid:

strong acids, oxidizing agents

Hazardous reactions:

Exothermic reaction.

Reacts with oxidizing agents.

Decomposition products:

Hazardous decomposition products: carbon monoxide, carbon dioxide, nitrogen oxides

Thermal decomposition:

approx. > 300 °C

Corrosion to metals:

No corrosive effect on metal.

11. Toxicological information

Acute toxicity

Information on: n-Methylpyrrolidone

Oral:

Type of value: LD50
Species: rat
Value: 3,605 mg/kg

Inhalation:

Type of value: LC50
Species: rat
Value: > 5.1 mg/l
Exposure time: 4 h

Dermal:

Type of value: LD50
Species: rat
Value: 5,000 mg/kg

Irritation / corrosion

Information on: n-Methylpyrrolidone

Skin:

Species: rabbit
Result: Irritant.
Method: Draize test

Eye:

Species: rabbit
Result: Irritant.
Method: Draize test

Repeated dose toxicity

Information on: n-Methylpyrrolidone

Experimental/calculated data:

rat by inhalation 2 Week 10 dose

rat by inhalation 2 Week 10 dose

rat by inhalation 2 Week 10 dose

12. Ecological Information

Fish

Acute: static
Salmo gairdneri, syn. O. mykiss/LC50 (96 h): > 500 mg/l
The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates

Acute:
DIN 38412 Part 11 static
Daphnia magna/EC50 (24 h): > 1,000 mg/l
The details of the toxic effect relate to the nominal concentration.

Aquatic plants

Toxicity to aquatic plants:

DIN 38412 Part 9 green algae/EC50 (72 h): > 500 mg/l
The details of the toxic effect relate to the nominal concentration.

Microorganisms

Toxicity to microorganisms:

DIN EN ISO 8192 aquatic
activated sludge, industrial/EC50 (0.5 h): > 600 mg/l
The details of the toxic effect relate to the nominal concentration.

Degradability / Persistence
Biological / Abiological Degradation

Test method:	OECD 301C; ISO 9408; 92/69/EEC, C.4-F (aerobic), Inoculum conforming to MITI
Method of analysis:	BOD of the ThOD
Degree of elimination:	73 % (28 d)
Evaluation:	Readily biodegradable (according to OECD criteria). Readily biodegradable (according to OECD criteria). Easily eliminated from water.

Bioaccumulation

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Do not discharge into waterways or sewer systems without proper authorization.

Container disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport
USDOT

Classified as combustible liquid in containers greater than 119 gallons.

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

OSHA hazard category: Skin and/or eye irritant; Combustible Liquid; Chronic target organ effects reported

EPCRA 311/312 (Hazard categories): Fire; Chronic; Acute

EPCRA 313:

CAS Number	Chemical name
872-50-4	N-Methylpyrrolidone

CERCLA RQ	CAS Number	Chemical name
100 LBS	74-89-5	methylamine

State regulations

State RTK	CAS Number	Chemical name
MA, PA	872-50-4	N-Methylpyrrolidone

CA Prop. 65:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

16. Other Information

NFPA Hazard codes:

Health : 2 Fire: 2 Reactivity: 0 Special:

HMIS III rating

Health: 2¤ Flammability: 2 Physical hazard: 0

NFPA and HMIS use a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates extreme danger. Although similar, the two rating systems are intended for different purposes, and use different criteria. The NFPA system was developed to provide an on-the-spot alert to the hazards of a material, and their severity, to emergency responders. The HMIS system was designed to communicate workplace hazard information to employees who handle hazardous chemicals.

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Local Contact Information
prod_reg@basf.com

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RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY BASF HEREUNDER ARE GIVEN GRATIS AND BASF ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

END OF DATA SHEET

Section 01 - Product Information

Identification of the company:

AZ Electronic Materials USA Corp.
70 Meister Avenue
Somerville, NJ 08876
Telephone No.: 800-515-4164

Information on the substance/preparation

Product Safety: 908-429-3562

Emergency Tel. number: 800-424-9300 CHEMTREC

Trade name: AZ® 111 XFS Photoresist

Section 02 - Composition information

Hazardous ingredients:

Chemical Name	CAS-no. (Trade secret no.)	Concentration [%]
1-Methoxy-2-propanol acetate	108-65-6	79.00

Non-hazardous ingredients:

Chemical Name	CAS-no. (Trade secret no.)	Concentration [%]
Cresol novolak resin	67829000004-5809P	13.00
Alkylether polymer	67829000004-5928P	4.00
Diazonaphthoquinonesulfonic esters	52125-43-6	3.00
Styrene-acrylic polymer	24980-16-3	1.00

Section 03 - Hazardous identification

Emergency overview: OSHA combustible liquid; DOT flammable liquid., Amber-red liquid with characteristic odor., Partially dissolves in water leaving a floating viscous mass., Irritating on contact or inhalation.

Expected route of entry

Skin contact: yes

Ingestion: no

Inhalation: yes

Eye contact: Contact with liquid and vapors.

Skin absorption: yes

Health effects of exposure:

Component information:

Eye: Causes eye irritation. Skin: Causes skin irritation. Ingestion: May be harmful if swallowed. Inhalation: Single exposure unlikely to be hazardous. High vapor concentration causes irritation to the nose, throat, and lungs. Systemic Effects: No hazard in normal industrial use. Reproductive & birth defects: Exposures having no adverse effect on the mother should have no effect on the fetus.

1-Methoxy-2-propanol acetate (108-65-6)

1-Methoxy-2-propanol acetate (PGMEA) can cause skin, eye, and respiratory irritation. Extreme or prolonged exposure may cause gastric and central nervous system effects. Long term, high level exposure to PGMEA has resulted in adverse effects to the livers and kidneys of experimental animals. PGMEA is readily absorbed through intact skin.

Known effects on other illnesses: Preexisting skin, eye, and respiratory conditions may be aggravated.

Listed carcinogen: IARC: NO NTP: NO OSHA: NO

HMIS:

Health: 2	Flammability: 2	Reactivity: 0	Personal protection: X

NFPA:

Health: 2	Flammability: 2	Reactivity: 0	Special notice: NONE

Section 04 - First aid measures

After inhalation: Remove victim to fresh air.

After contact with skin: Immediately remove contaminated clothing. Flush affected area thoroughly with water. After flushing with water, remove residue with soap and water. If necessary, clean area with a cloth or paper towel wetted with acetone. Assure adequate ventilation. Dispose of cloth/towel in a suitable receptacle. Consult physician if exposure is extensive or if irritation occurs.

After contact with eyes: Flush thoroughly with water for 15 minutes. Get immediate medical help.

After ingestion:	If person is conscious, give water or milk to dilute stomach contents. Never give anything by mouth to an unconscious person. Consult physician.
Advice to doctor / Treatment:	Administer oxygen if there is difficulty in breathing.

Section 05 - Fire fighting measures

Flash point:	108 °F Method: closed cup
Suitable extinguishing media:	water spray jet, foam, dry powder, carbon dioxide
Special fire fighting procedure:	Use self-contained breathing apparatus and full protective clothing. Use water spray to cool drums in fire area.
Specific hazards during fire fighting:	Thermal decomposition may generate carbon dioxide and carbon monoxide, oxides of sulfur and nitrogen, and hydrogen fluoride.
Unusual fire and explosion hazards:	Solvent vapors., Emits toxic fumes under fire conditions.

Section 06 - Accidental release measures

Steps to be taken in case of spill or leak:	Wearing appropriate personal protective equipment, contain spill, ventilate area of spill or leak, remove all sparking devices or ignition sources, collect onto inert absorbent, and place in a suitable container.

Section 07 - Handling and Storage

Advice on safe handling:

Avoid breathing vapors and contact with skin, eyes, and clothing.

Wash thoroughly after handling.

Keep container closed.

Keep away from heat, sparks, and flame.

Further information for storage conditions:

Transport and store under dry conditions tightly closed and protected from heat and light.

Section 08 - Exposion Control / personal protection

Respiratory protection:	Chemical cartridge respirator recommended for exposures exceeding TLV.
Hand protection:	For short-term exposure (splash protection): Nitrile rubber gloves.
Eye protection:	Safety eyewear to protect against splashes.
Skin and body protection:	Clothing suitable to prevent skin contact.
Advice on system design:	Use local exhaust ventilation.
IDLH:	Listed: no

Section 09 - Physical and chemical properties

Form:	Liquid
Color:	Clear, amber-red
Odor:	Strong, characteristic odor.
Density:	1 g/cm3 20 °C
Starts to boil:	from 145 °C
Evaporation number:	0.33 (PGMEA)
Vapor pressure:	2.9 Torr Method: calculated
Viscosity, dynamic:	< 25 mPas 20 °C
Loss on drying:	79 %

Section 10 - Stability and reactivity

Hazardous reactions:	Stable.
Hazardous polymerization:	Will not occur.
Conditions to avoid:	Avoid contact with oxidizing agents. Avoid contact with strong acids. Avoid contact with alkaline materials.

Section 11 - Toxiclogical information

Acute oral toxicity:	Based on data from components this material is considered, not harmful (rat acute oral LD50 > 5000 mg/kg).
Acute inhalation toxicity	Based on data from components, this material is considered, not harmful (LC50 greater than 10,000 ppm or 200 mg/L), Based on component data, material is considered irritating to the respiratory tract.
Acute dermal toxicity:	The acute toxicity via the dermal route of exposure, based on component data, suggest that this material should be considered not harmful (rabbit or rat dermal LD50 greater than 2000 mg/kg)
Skin irritation:	Based on data from components, this material is considered a non-irritant; however, the product is considered to be a human skin irritant.
Eye irritation:	Based on data from components, this material is considered to be a mild eye irritant.

1-Methoxy-2-propanol acetate (108-65-6)

Acute oral toxicity:	LD50 rat (male) 8,500 mg/kg

1-Methoxy-2-propanol acetate (108-65-6)

Acute oral toxicity:	LD50 rat (female) 10,000 mg/kg

1-Methoxy-2-propanol acetate (108-65-6)

Acute inhalation toxicity	LC50 rat > 4350 ppm

1-Methoxy-2-propanol acetate (108-65-6)

Acute dermal toxicity:	LD50 rabbit > 5 mg/kg

Section 12 - Ecological information

Biodegradability:	No information.
Toxicity to fish:	Based on data from components, this material is classified as:, Not Harmful (LC50 > 100 mg/L).
Toxicity of aquatic invertebrates:	Based on data from components, this material is classified as:, Not Harmful (EC50 greater than 100 mg/L).

Toxicity to algae : No data available.

1-Methoxy-2-propanol acetate (108-65-6)

Toxicity to fish: (Fathead minnow)
161 mg/l

1-Methoxy-2-propanol acetate (108-65-6)

Toxicity of aquatic invertebrates: (Daphnia magna)
400 mg/l

Section 13 - Disposal considerations

Product: Consult local, state, and federal regulations.

For disposal, this material is a flammable hazardous waste under RCRA.

RCRA hazardous waste: RCRA number: D001

Section 14 - Transport information

Land transport

- *DOT:*

UN-No: 1993
Proper technical name: FLAMMABLE LIQUID, N.O.S. contains (Methoxypropylacetate)
3
Packaging group: III
Labels: 3

Sea transport

- *IMDG:*

UN-No: 1993
Proper technical name: FLAMMABLE LIQUID, N.O.S. contains (Methoxypropylacetate)
Class: 3
Packaging group: III
Marine pollutant:
EmS: F-E, S-E
MFAG:
Labels: 3

Air transport

- *ICAO/IATA-DGR:*

UN/ID No.:	UN 1993
Proper technical name:	FLAMMABLE LIQUID, N.O.S. contains (Methoxypropylacetate)
Class:	3
Packaging group:	III
Labels:	3

Section 15 - Regulatory information

TSCA Status:	All components of this product are listed on the TSCA Inventory.
SARA (section 311/312):	Reactive hazard: no Pressure hazard: no Fire hazard: yes Immediate/acute: yes Delayed/chronic: no
SARA 313 information:	This product is not subject to SARA Title III Section 313 reporting requirements under 40 CFR 372.
Volatile organic compounds:	Content VOC (g/l): 795 g/l Method: calculated

Section 16 - Other information

Label information

CAUTION!

COMBUSTIBLE LIQUID AND VAPOR HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN Contains material that, based on animal data, can cause skin, eye, and respiratory irritation. Prolonged or repeated overexposure may cause gastric and central nervous system effects.

Keep away from heat and flame. Avoid breathing vapor. Avoid contact with skin, eyes, and clothing. Use only with adequate ventilation, and proper protective eyewear, gloves, and clothing. Wash thoroughly after handling. Keep container closed.

In case of contact, flush eyes with plenty of water for 15 minutes. Get medical attention immediately. Flush affected skin areas with water, and wash with mild soap and water. Remove contaminated clothing. If INHALED, remove individual to fresh air. If breathing is difficult, give oxygen. If ingested, give water or milk to dilute stomach contents. Never give anything by mouth to an unconscious person. Get medical attention immediately for ingestion or breathing problems or if skin contact is extensive.

In case of fire, use water, alcohol resistant foam, dry chemical, or CO2.

If spilled, wear protective clothing, remove ignition sources, prevent sparks, and ventilate area. Absorb with inert material, collect, and place in a chemical waste container.

Keep sealed in original container. Product must be kept refrigerated until use. Temperature range for refrigeration is 30 to 55 F (- 1 to 13 C). Allow product to reach ambient temperature prior to use. Empty container may contain harmful residue.

The solvent in this product is not photochemically reactive per Rule 102 of the California South Coast Air Quality Management District.

Kinetronics Corporation
4363 Independence Court
Sarasota, Florida 34234

Phone 941-951-2432
Fax 941-955-5992
Web Site: www.kinetronics.com

Material Safety Data Sheet
Isopropyl Alcohol

PRODUCT & COMPANY IDENTIFICATION

In case of Emergency call CHEMTREC 1-800-424-9300

Supplier	Simchem Corporation, 311 Sarasota Center Blvd., P.O. Box 697, Osprey, Florida, 34229-0697 (941) 377-9935 Fax (941) 377-9539
CAS Number	67-63-0
Synonyms	Isopropanol; sec-propyl alcohol; sec-propanol; dimethylcarbinol
Formula	$(CH_3)2CHOH$

TRANSPORTATION DATA

US Department of Transportation – 49 CFR	
Proper Shipping Name	Isopropanol
UN Number	UN1219
Hazard Class	3
Packing Group	II
Labels	Flammable Liquid

PHYSICAL/CHEMICAL DATA

Appearance	Clear, colorless liquid
Odor	Rubbing alcohol
Boiling Point	82º C
Melting Point	-89º C
Vapor Pressure	44 @ 25º C (mm Hg)
Vapor Density (Air = 1)	2.1
Specific Gravity	0.79 @ 20º C / 4º C
Solubility in Water	Miscible in water
Volatile by Volume	100% @ 21º C
Evaporation Rate	2.83 (BuAc =1)

REACTIVITY DATA

Stability	Stable
Incompatibility	Heat, flame, strong oxidizers, acetaldehyde, acids, chlorine, ethylene oxide, isocyanates.
Hazardous Decomposition Products	Carbon dioxide and carbon monoxide may form when heated to decomposition.
Conditions to Avoid	Heat, flame, ignition sources and incompatibles.
Hazardous Polymerization	Will not occur.

FIRE AND EXPLOSION HAZARD DATA

Flash Point	12º C
Auto Ignition Temperature	399º C
Flammable Limits	LEL: 2.0 UEL: 12.7
Fire Extinguishing Spray	Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool, dilute spills and nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.
Explosion	Above flash point, vapor air mixtures are explosive within flammable limits noted above. Contact with strong oxidizers may cause fire or explosion. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.
Special Information	In the event of a fire, wear full protective clothing and NIOSH-approved self- contained breathing apparatus with full face piece operated in the pressure demand for other positive pressure mode.

PRECAUTIONS FOR SAFE HANDLING & USE

to be Taken in Case Material is Steps Spilled or Released	Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified on section 5. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.
Disposal Method	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.
Handling and Storage	Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tolls and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues.

Kinetronics Corporation
4363 Independence Ct.
Sarasota, FL 34234

Phone: (941) 951-2432
Fax: (941) 955-5992
Web Site: www.Kinetronics.com

HEALTH HAZARD DATA

Potential Health Effects:

Inhalation	Inhalation of vapors irritates the respiratory tract. Exposure to high concentrations has a narcotic effect, producing symptoms of dizziness, drowsiness, headache, staggering, unconsciousness and possibly death.
Ingestion	Ingestion can cause drowsiness, unconsciousness, and death. Gastrointestinal pain, cramps, nausea, vomiting, and diarrhea may also result. The single lethal dose for a human adult = about 250 mls (8 ounces).
Skin Contact	May cause skin irritation with redness and pain. May be absorbed through the skin with possible systemic effects.
Eye Contact	Vapors cause eye irritation. Splashes caused severe irritation, possible corneal burns and eye damage.

First Aid Measures:

Inhalation	In case of Inhalation, remove to fresh air. In not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion	Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact	Immediately flush skin with plenty of water for at least 15 minutes. Call a physician if irritation develops.
Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Personal Protective Equipment:

Skin Protection	Were impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Neoprene and nitrile rubber are recommended materials.
Eye Protection	Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

ADDITIONAL INFORMATION

Always comply with all applicable international, federal, state and local regulations regarding the transportation, storage, use and disposal of this chemical.

Due to the changing nature of regulatory requirements, the regulatory information listed in Section X this document should not be considered all-inclusive or authoritative. International, Federal, State Local regulations should be consulted to determine with all required reporting requirements.

The information in this MSDS was obtained from sources, which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, MSDS information may not be applicable.

Oregon
John A. Kitzhaber, MD, Governor

Department of Environmental Quality
Western Region - Salem Office
750 Front St NE, Suite 120
Salem, OR 97301
(503) 378-8240
FAX (503) 373-7944
OTRS 1-800-735-2900

November 7, 2011

Mr. Mark Hauck
Perpetua Power Source Technologies, Inc.
4314 Research Way
Corvallis, OR 97333

Re: Perpetua Power Source Technologies
El No. 02-0017
NC No. 26510
Benton County

Dear Mr. Hauck:

The Department has reviewed your Notice of Intent to Construct and Request for Construction Approval for the following project:

Facility Name/Location
Perpetua Power Source Technologies, Inc.
1749 Airport Way
Corvallis, OR 97333

Project Description
Construction of a thermoelectric generation device manufacturing facility.

CONSTRUCTION APPROVAL, PLANS AND SPECIFICATIONS

Based on a review of the plans and specs for this project, construction approval is granted subject to the conditions listed below:

1. Construction of the project shall conform to the plans and specifications submitted. No significant changes or deviations shall be made without the prior written approval of the Department of Environmental Quality.
2. Granting approval does not relieve the owner or permittee of the obligation to obtain required local, state and other permits and to comply with the appropriate statutes, Administrative Rules, Standards, and if applicable, to demonstrate compliance with applicable permit limitations.

3. This approval does not guarantee the adequacy of the proposed construction or the accuracy of the air emission calculations submitted with your application.
4. Construction may proceed immediately upon receipt of this approval.
5. Please fill out and return the enclosed Notice of Construction Completion form within thirty (30) days of completion of this project.

If the Department can be of any assistance, or if there are any questions regarding this approval, please contact me in Salem at (503) 378-5315.

Sincerely,

Karen White-Fallon
DEQ-Salem-Air Quality

Enc: Notice of Approved Construction Completion Form

cc with memo: AQ Division

State of Oregon
Department of Environmental Quality

Memorandum

To: File **Date:** November 7, 2011

From: Karen White-Fallon

Section: Air Quality

Subject: Perpetua Power Source Technologies, Inc.

BACKGROUND

Perpetua Power Source Technologies, Inc. (Perpetua) proposes to install and operate a facility that manufactures thermoelectric generation devices. The facility will be located at 1749 Airport Avenue, Corvallis, Oregon. They currently operate a research and development facility located at 4134 SW Research Way, Corvallis, Oregon. The process involves depositing bismuth, antimony, tellurium and small amounts of selenium onto polyimide substrates to produce the thermoelectric generation devices.

DISCUSSION

The fabrication processes include standard semiconductor industry physical vapor deposition and lithographic practices. The process uses solvents, developers, and photoresists during the lithographic processes. The Perpetua process does not use some of the standard semi-conductor strong acids (HF, $HN0_3$), and uses relatively low volumes of solvents. The air emissions at maximum design capacity operating two shifts per day were calculated to be 1 ton/year of volatile organic compounds (VOCs) and deminimis amounts of particulate matter (PM/PMk/$PM_{2.5}$). The VOC calculations are based upon material balance assuming that 100% of the volatile compounds are emitted. The proposed process will include an acid scrubber and a baghouse for particulate control. There are no proposed fuel combustion devices and they do not have the potential to emit greenhouse gases. Based upon a review of the proposed construction, an air permit is not required at this time. This is based upon the following information:

1. The manufacturing of the thermoelectric generation devices is not a listed activity in OAR 340-216-0020, Table 1. Therefore an Air Contaminant Discharge Permit (ACDP) is not required based upon a listed category.
2. The facility does not have the potential to emit greater than 10 tons/year of any criteria pollutants if the source were to operate uncontrolled as described in OAR 340-216-0020, Table 1, Part B (85).
3. The facility does not have the potential to emit greater than 10 tons/year of any single hazardous air pollutant as outlined in OAR-340-216-0020, Table 1, Part C.

An ACDP will be required in the future if Perpetua increases emissions, if the facility were to operate uncontrolled, to greater than 10 tons/year of any criteria pollutant.

CONCLUSIONS/RECOMMENDATIONS

Based on the above, it is concluded that the proposed project described in NC No. 26510 is acceptable. This project meets the definition of a Type 2 change as defined in OAR 340-210-0225(2) because it meets the applicable criteria in sub-sections (l)(a), (l)(b), (l)(d), and (l)(e) of OAR 340-210-0225 and emissions from any stationary source or combination of stationary sources will not increase by more than or equal to the significant emission rate. Therefore, construction approval is recommended.

Exhibit 10.43

FIRST AMENDMENT TO LEASE AGREEMENT

This First Amendment to Lease Agreement (the "**Amendment**") is entered into as of December 22, 2011 (the "**Amendment Effective Date**") to amend the Lease Agreement, dated November 23, 2011 (the "**Lease**"), between AVI BioPharma, Inc., an Oregon Corporation ("**Landlord**"), and Perpetua Power Source Technologies, Inc., an Oregon corporation ("**Tenant**"). Landlord and Tenant may each be referred to herein as a "**Party**," or collectively as the "**Parties.**"

WHEREAS, Landlord and Tenant entered into the Lease, whereby Tenant leases the Premises from Landlord.

WHEREAS, the Parties mutually wish to extend the date by which Landlord must receive the Lender's consent to the Lease.

NOW, THEREFORE, in consideration of the promises and mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Defined Terms. Capitalized terms that are used in this Amendment have the meanings set forth in the Lease, unless otherwise defined in this Amendment.

2. Amendment.

(a) Effective as of the Amendment Effective Date, Section 1(c) of the Lease shall be replaced in its entirety with the following:

"(c) This Lease is also conditioned upon Landlord receiving consent to this Lease, if required, from Landlord's lender, the successor in interest to Cowlitz Bank ("Lender"), within sixty (60) days after the Commencement Date. Landlord will use commercially reasonable efforts to obtain Lender's consent to this Lease within the 60-day period, if such consent is required by Lender's loan documents. If Lender's consent is required and cannot be obtained within sixty (60) days after the Commencement Date, then (unless the parties agree to extend the deadline) the Lease will be deemed void from its inception."

3. Full Force and Effect. Except as specifically provided in this Amendment, the terms and conditions of the Lease remain in full force and effect.

4. Entire Agreement. This Amendment together with the Lease (to the extent not amended hereby) and all attached schedules thereto represent the entire agreement of the Parties and shall supersede any and all previous contracts, arrangements or understandings between the Parties with respect to the subject matter herein.

5. Modification. No provisions of this Amendment may be modified or amended unless expressly agreed upon in a writing signed by the Parties, nor shall any terms be waived unless expressly agreed upon in a writing signed by the Party charged therewith.

6. Counterparts. This Amendment may be executed in counterparts, including facsimile counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

7. Governing Law. This Amendment shall be governed by and construed in accordance with the laws of the State of Oregon without regards to the conflicts of laws principals.

(Signature Page Follows)

IN WITNESS WHEREOF, the Parties have executed this Amendment by their duly authorized representatives as of the Amendment Effective Date.

AVI BIOPHARMA, INC.

By: /s/ Christopher Garabedian

Name: Christopher Garabedian

Title: President and CEO

PERPETUA POWER SOURCE TECHNOLOGIES, INC.

By: /s/ Nicholas Fowler

Name: Nicholas Fowler

Title: CEO

Exhibit 10.44

SECOND AMENDMENT TO LEASE AGREEMENT

This Second Amendment to Lease Agreement (the "**Second Amendment**") is entered into as of January 20, 2012 (the "**Second Amendment Effective Date**") to amend the Lease Agreement, dated November 23, 2011, as amended on December 22, 2011 (the "**Lease**"), between AVI BioPharma, Inc., an Oregon Corporation ("**Landlord**"), and Perpetua Power Source Technologies, Inc., an Oregon corporation ("**Tenant**"). Landlord and Tenant may each be referred to herein as a "**Party**," or collectively as the "**Parties.**"

WHEREAS, Landlord and Tenant entered into the Lease, whereby Tenant leases the Premises from Landlord.

WHEREAS, the Parties mutually wish to extend the date by which Landlord must receive the Lender's consent to the Lease.

NOW, THEREFORE, in consideration of the promises and mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Defined Terms. Capitalized terms that are used in this Second Amendment have the meanings set forth in the Lease, unless otherwise defined in this Second Amendment.

2. Amendment.

(a) Effective as of the Second Amendment Effective Date, Section 1(c) of the Lease shall be replaced in its entirety with the following:

"(c) This Lease is also conditioned upon Landlord receiving consent to this Lease, if required, from Landlord's lender, the successor in interest to Cowlitz Bank ("Lender"), within ninety (90) days after the Commencement Date. Landlord will use commercially reasonable efforts to obtain Lender's consent to this Lease within the 90-day period, if such consent is required by Lender's loan documents. If Lender's consent is required and cannot be obtained within ninety (90) days after the Commencement Date, then (unless the parties agree to extend the deadline) the Lease will be deemed void from its inception."

3. Full Force and Effect. Except as specifically provided in this Second Amendment, the terms and conditions of the Lease remain in full force and effect.

4. Entire Agreement. This Second Amendment together with the Lease (to the extent not amended hereby) and all attached schedules thereto represent the entire agreement of the Parties and shall supersede any and all previous contracts, arrangements or understandings between the Parties with respect to the subject matter herein.

5. Modification. No provisions of this Second Amendment may be modified or amended unless expressly agreed upon in a writing signed by the Parties, nor shall any terms be waived unless expressly agreed upon in a writing signed by the Party charged therewith.

6. Counterparts. This Second Amendment may be executed in counterparts, including facsimile counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

7. Governing Law. This Second Amendment shall be governed by and construed in accordance with the laws of the State of Oregon without regards to the conflicts of laws principals.

(Signature Page Follows)

IN WITNESS WHEREOF, the Parties have executed this Second Amendment by their duly authorized representatives as of the Second Amendment Effective Date.

AVI BIOPHARMA, INC.

By: /s/ Christopher Garabedian

Name: Christopher Garabedian

Title: Chief Executive Officer

PERPETUA POWER SOURCE TECHNOLOGIES, INC.

By: /s/ Nicholas Fowler

Name: Nicholas Fowler

Title: Chief Executive Officer

Exhibit 10.47

SECOND AMENDMENT TO LEASE

THIS SECOND AMENDMENT TO LEASE (this "Amendment") is entered into as of this 31st day of January, 2012, by and between BMR-3450 MONTE VILLA PARKWAY LLC, a Delaware limited liability company ("Landlord"), and AVI BIOPHARMA, INC., an Oregon corporation ("Tenant").

RECITALS

A. WHEREAS, Landlord and Tenant entered into that certain Lease dated as of July 27, 2009, as amended by that certain Acknowledgement of Term Commencement Date and Term Expiration Date dated as of October 7, 2009, and that certain 1st Amendment to Lease dated as of August 30, 2011 (collectively, and as the same may have been further amended, supplemented or modified from time to time, the " Lease"), whereby Tenant leases certain premises (the "Premises") from Landlord at 3450 Monte Villa Parkway in Bothell, Washington (the "Building");

B. WHEREAS, Tenant wants to extend the dates for effectiveness of the Termination Option and the Termination Notice due date; and

C. WHEREAS, Landlord and Tenant desire to modify and amend the Lease only in the respects and on the conditions hereinafter stated.

AGREEMENT

NOW, THEREFORE, Landlord and Tenant, in consideration of the mutual promises contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, agree as follows:

1. Definitions. For purposes of this Amendment, capitalized terms shall have the meanings ascribed to them in the Lease unless otherwise defined herein.

2. Amendment to Section 3.2. The first sentence of Section 3.2 of the Lease is amended and restated in its entirety to read as follows:

"Tenant shall have the one-time option to terminate this Lease (the "Termination Option") effective as of June 1, 2013 (the "Permitted Early Termination Date") (except for those provisions that expressly survive the expiration or earlier termination of this Lease) upon delivery of written notice to Landlord no later than June 1, 2012 (the "Termination Notice"); provided that Tenant pay to Landlord at the time Tenant delivers to Landlord the Termination Notice a termination fee equal to Two Hundred Seven Thousand Eighty-Nine and 40/100 Dollars ($207,089.40), which Landlord and Tenant agree equals the sum of (a) any unamortized TI Allowance, (b) any unamortized broker fees or commissions and (c) one month of Base Rent at the rate in effect at the time of Tenant's exercise of the Termination Option (collectively, the "Termination Fee")."

3. Broker. Tenant represents and warrants that it has not dealt with any broker or agent in the negotiation for or the obtaining of this Amendment, other than EDG Commercial Real Estate, and agrees to indemnify, defend and hold Landlord harmless from any and all cost or liability for compensation claimed by any other broker or agent employed or engaged by it or claiming to have been employed or engaged by it.

4. No Default. Tenant represents, warrants and covenants that, to Tenant's actual knowledge, without inquiry, Landlord and Tenant are not in default of any of their respective obligations under the Lease and no event has occurred that, with the passage of time or the giving of notice (or both) would constitute a default by either Landlord or Tenant thereunder.

5. Effect of Amendment. Except as modified by this Amendment, the Lease and all the covenants, agreements, terms, provisions and conditions thereof shall remain in full force and effect and are hereby ratified and affirmed. The covenants, agreements, terms, provisions and conditions contained in this Amendment shall bind and inure to the benefit of the parties hereto and their respective successors and, except as otherwise provided in the Lease, their respective assigns. In the event of any conflict between the terms contained in this Amendment and the Lease, the terms herein contained shall supersede and control the obligations and liabilities of the parties. From and after the date hereof, the term "Lease" as used in the Lease shall mean the Lease, as modified by this Amendment.

6. Mortgagee Consent. Landlord represents that there is currently no mortgagee with respect to the Property.

7. Miscellaneous. This Amendment becomes effective only upon execution and delivery hereof by Landlord and Tenant. The captions of the paragraphs and subparagraphs in this Amendment are inserted and included solely for convenience and shall not be considered or given any effect in construing the provisions hereof. All exhibits hereto are incorporated herein by reference. Submission of this instrument for examination or signature by Tenant does not constitute a reservation of or option for a lease, and shall not be effective as a lease, lease amendment or otherwise until execution by and delivery to both Landlord and Tenant.

8. Counterparts. This Amendment may be executed in one or more counterparts, each of which, when taken together, shall constitute one and the same document.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, Landlord and Tenant have hereunto set their hands as of the date and year first above written, and acknowledge that they possess the requisite authority to enter into this transaction and to execute this Amendment.

LANDLORD:

BMR-3450 MONTE VILLA PARKWAY LLC,
a Delaware limited liability company

By: /s/ Kevin M. Simonsen
Name: Kevin M. Simonsen
Title: VP, Real Estate Counsel

TENANT:

AVI BIOPHARMA, INC.,
an Oregon corporation

By: /s/ Christopher Garabedian
Name: Christopher Garabedian
Title: Chief Executive Officer

STATE OF WASHINGTON)
: ss.
COUNTY OF KING)

I certify that I know or have satisfactory evidence that Christopher Garabedian is the person who appeared before me, and s/he acknowledged that s/he signed this instrument, on oath stated that s/he was authorized to execute the instrument and acknowledged it as the CEO of AVI BioPharma, Inc., a corporation, to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

Dated this 23rd day of January, 2012.

/s/ Joanne Vlastelica
[Signature of Notary]

[Seal]

Joanne Vlastelica
[Print Name of Notary]

Notary Public in and for the State of
Washington, residing at Edmonds.
My commission expires: 2/19/15.

ACKNOWLEDGMENT

State of California
County of San Diego

On January 31, 2012 before me, Kristen M. White, Notary Public, personally appeared Kevin M. Simonsen, Vice President Real Estate Counsel, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal. [Seal]

Signature: /s/ Kristen M. White

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders
AVI BioPharma, Inc.

We consent to the incorporation by reference in the registration statements (Nos. 333-160922, 333-150021, 333-138299, 333-133211, 333-109015, 333-86778, 333-105412, 333-68502, 333-45888, 333-93135, 333-86039) on Form S-3 and (Nos. 333-172823, 333-175031, 333-101826, 333-49996, 333-49994, and 333-34047) on Form S-8 of AVI BioPharma, Inc. (a developmental stage enterprise) of our report dated March 13, 2012 with respect to the balance sheets of AVI BioPharma, Inc. as of December 31, 2011 and 2010 and the related statements of operations, shareholders' equity (deficit) and comprehensive income (loss), and cash flows for each of the years in the three-year period ended December 31, 2011 and the information included in the cumulative from inception presentations for the period January 1, 2002 to December 31, 2011 (not separately presented), and the effectiveness of internal control over financial reporting as of December 31, 2011, which reports appear in the December 31, 2011 annual report on Form 10-K of AVI BioPharma, Inc.

/s/ KPMG LLP

Seattle, Washington
March 13, 2012

EXHIBIT 31.1

CERTIFICATION

I, Christopher Garabedian, certify that:

1. I have reviewed this annual report on Form 10-K of AVI BioPharma, Inc., (the "Registrant");

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

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

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

March 13, 2012

/s/ Christopher Garabedian

Christopher Garabedian
President and Chief Executive Officer
(Principal Executive and Financial Officer)

EXHIBIT 31.2

CERTIFICATION

I, Michael A. Jacobsen, certify that:

1. I have reviewed this annual report on Form 10-K of AVI BioPharma, Inc., (the "Registrant");

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

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

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

March 13, 2012

/s/ Michael A. Jacobsen

Michael A. Jacobsen,
Vice President, Finance
(Principal Accounting Officer)

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)

I, Christopher Garabedian, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of AVI BioPharma, Inc. on Form 10-K for the fiscal year ended December 31, 2011, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of AVI BioPharma, Inc.

March 13, 2012

/s/ Christopher Garabedian

Christopher Garabedian,
President and Chief Executive Officer
(Principal Executive and Financial Officer)

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to AVI BioPharma, Inc. and will be retained by AVI BioPharma, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

This certification accompanies this Report on Form 10-K pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by such Act, be deemed filed by AVI BioPharma, Inc. for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that AVI BioPharma, Inc. specifically incorporates it by reference.

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002
(18 U.S.C. SECTION 1350)

I, Michael A. Jacobsen, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of AVI BioPharma, Inc. on Form 10-K for the fiscal year ended December 31, 2011, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of AVI BioPharma, Inc.

March 13, 2012

/s/ Michael A. Jacobsen

Michael A. Jacobsen,
Vice President, Finance
(Principal Accounting Officer)

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to AVI BioPharma, Inc. and will be retained by AVI BioPharma, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

This certification accompanies this Report on Form 10-K pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by such Act, be deemed filed by AVI BioPharma, Inc. for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that AVI BioPharma, Inc. specifically incorporates it by reference.