

Mail Stop 6010

May 15, 2008

James A. Hayward, Ph.D., Sc.D.
Chief Executive Officer
Applied DNA Sciences, Inc.
25 Health Sciences Drive, Suite 113
Stoney Brook, New York 11790

**Re: Applied DNA Sciences, Inc.
Registration Statement on Form S-1
Amendment no. 9 filed April 21, 2008
File No. 333-122848**

Dear Dr. Hayward:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

FORM S-1

Management's Discussion and Analysis of Financial Condition and Plan of Operations

Critical Accounting Policies, page 14

Equity Issued with Registration Rights

1. As disclosed in Note C, you have accrued for registration rights liquidated damages in accordance with EITF 00-19-2. However, while you refer to this technical guidance in your discussion of your accounting policy for Warrant

Liability, you do not discuss it with respect to your accounting policy for Equity Issued with Registration Rights. Please expand your disclosure to discuss the methods and key assumptions used to estimate this obligation. In particular, explain how you computed the 2007 increase in this obligation by \$7,725,585. Also, include all disclosure required by paragraph 12 of EITF 00-19-2, such as the events or circumstances that would require you to transfer consideration under this arrangement and any settlement alternatives.

Revenue Recognition

2. You recognize revenue from testing contracts to “provide for a profit margin relative to the testing performed,” estimating actual labor and other costs for this testing process based on your historical experience. Please expand your disclosure to provide the following information.
 - Describe all deliverables and corresponding payments to be received under your testing contracts.
 - Given your recent transition to an operating company, describe how you estimate actual labor and other costs in the absence of historical experience.
 - We do not understand your terminology “provide for a profit margin relative to the testing performed.” Provide a more specific definition of the terms, profit margin and testing performed.
 - Describe how you estimate profit margin and quantify the estimated profit margins for testing contracts initiated in 2007 and expected in 2008.
 - Describe how you determine the level of testing performed.
 - Tell us why you believe your revenue recognition complies with Staff Accounting Bulletin 104.

Commercial Agreements and Distribution of our Products, page 27

3. Please expand the discussion pertaining to the Supima Cotton Agreement to indicate the aggregate dollar amount of the payments you received for the feasibility study and the current status of such study.
4. Please file the Supima agreement as an exhibit or provide a detailed analysis of why the agreement does not have to be filed. We may have additional comments.

Selling Stockholders, page 49

5. Please expand the discussion to identify the natural person(s) with investment or voting control over the securities owned by the non-natural persons listed in this section.

Notes to Consolidated Financial Statements

Note D – Private Placement of Convertible Notes

Revaluation of Warrant Liability, page F-21

6. In 2006 and 2007, you recorded gains of \$16.8 million and \$1.3 million, respectively, in revaluing your debt derivative and warrant liabilities. In September 2007, you reclassified the warrant liabilities to equity resulting from the exchange of the remaining secured convertible promissory notes for common stock. We were unable to understand certain amounts in your financial statements that relate to these transactions. Please provide us with the following supplemental information supporting your accounting for these transactions.
- Provide a roll forward of the debt derivative and warrant liability that relates the net gains in revaluation of debt derivatives and warrant liabilities to changes in the corresponding liability.
 - Your reclassification of the fair value of warrants resulted in a net credit to stockholders' equity of \$4,146,482, reflecting increases of \$34.9 million in the accumulated deficit and \$39.1 million in additional paid in capital. Explain your basis for this accounting treatment and how you determined these amounts.

* * *

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

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- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Franklin Wyman at (202) 551-3660 or Mary Mast at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact John Krug at (202) 551-3862, Suzanne Hayes, Branch Chief, at (202) 551-3675, or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: Merrill Kraines, Esquire
Fulbright & Jaworski L.L.P.
666 Fifth Avenue
New York, New York 10103

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