



DIVISION OF  
CORPORATION FINANCE

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

January 14, 2011

Robert A. Cascella  
Chief Executive Officer  
Hologic, Inc.  
35 Crosby Drive  
Bedford, MA 01730

**Re: Hologic, Inc.  
Definitive Proxy Statement on Schedule 14A  
Filed January 19, 2010  
Letter Dated January 12, 2011  
File No. 000-18281**

Dear Mr. Cascella:

We have limited our review of your filing to the issue we have addressed in our comment.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

1. Please expand your analysis supporting your determination not to provide corrective disclosure to explain how you believe your current disclosure permits investors to determine the nature of the errors and to analyze trends among compensation components and totals accurately. For example, we note the following:
  - The errors in your summary compensation table in your definitive proxy statement filed on January 19, 2010 span various named executive officers, columns, and fiscal years according to your December 20, 2010 response letter: fiscal 2007 salary for Glenn P. Muir, 2007 compensation expense for stock awards for Jay A. Stein, 2007 total compensation for Mr. Muir, and 2009 total compensation for Howard B. Doran, Jr.
  - The errors in your summary compensation table in your definitive proxy statement filed on January 22, 2009 also span various columns, named executive officers, and fiscal years: fiscal 2007 salary for Glenn P. Muir, 2007

compensation expense for stock awards for Jay A. Stein, 2007 total compensation for Mr. Muir, and at least one element of 2008 compensation for Patrick J. Sullivan, your former Executive Chairman.

- There were errors in your summary compensation table in your definitive proxy statement filed on January 25, 2008 related to 2007 base salary and 2007 total compensation for one of your named executive officers per your response to prior comment 2.
- The error in reported compensation expense for stock awards for Mr. Stein for fiscal year 2007 was \$275,001, as compared to Mr. Stein's actual total compensation of \$684,625.
- It appears that you might not have disclosed a correct summary compensation at least since the adoption of the rules on Executive Compensation and Related Person Disclosure in 2006. Refer to Securities Act Release No. 8732A.

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 the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. 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.

In responding to our comment, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Aslynn Hogue at (202) 551-3841 or me at (202) 551-3617 with any questions.

Sincerely,

Russell Mancuso  
Branch Chief

CC (by facsimile): Glenn P. Muir, Chief Financial Officer