



DIVISION OF
CORPORATION FINANCE

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

January 31, 2011

Glenn P. Muir
Chief Financial Officer
Hologic, Inc.
35 Crosby Drive
Bedford, MA 01730

Re: Hologic, Inc.
Form 10-K for the fiscal year ended September 25, 2010
Filed November 24, 2010
File No. 000-18281

Dear Mr. Muir:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

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.

Form 10-K for the fiscal year ended September 25, 2010

Item 11. Executive Compensation, page 84

1. We note your disclosure in the last sentence of "risk oversight" on page 10 of your definitive proxy statement, which has been incorporated by reference. Please tell us the process you undertook to reach the conclusion that your compensation programs do not create risks that are reasonably likely to have a material adverse effect. Refer to Regulation S-K Item 402(s).
2. Refer to the table on page 40 of your definitive proxy statement. Given the disclosure regarding your short-term incentive plan on pages 20-25, it appears that table should include the disclosures required by Item 402(d)(2)(iii) of Regulation S-K. Please revise future filings.

3. In future filings, please disclose by footnote for each director the aggregate number of stock awards and the aggregate number of option awards outstanding at fiscal year end. See Instruction to Item 402(k)(2)(iii) and (iv) of Regulation S-K.

Item 12. Security Ownership of Certain Beneficial Owners . . . page 84

4. Given the numbers in the table on page 53 of your definitive proxy statement for each of your directors, director nominees and executive officers, please tell us how you determined they hold an aggregate of 6,002,574 shares.

Item 13. Certain Relationships . . . , page 85

5. Please tell us, and revise future filings to disclose, the standards applied by your audit committee in reviewing related-party transactions, the types of transactions subject to that review, and when and why it may delegate review to another committee.

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 comments, 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 Geoff Kruczek at (202) 551-3641 with any questions.

Sincerely,

Amanda Ravitz
Assistant Director

CC (by facsimile): Mark J. Casey, Senior Vice President, General Counsel and Secretary