



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

January 30, 2009

Via U.S. Mail and Facsimile to (781) 280-0614

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

**Re: Hologic, Inc.
Form 10-K for the Fiscal-Year ended September 27, 2008
Filed November 26, 2008
File No. 000-18281**

Dear Mr. Muir:

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 10-K for the Fiscal-Year ended September 27,2008

Item 9A. Controls and Procedures, page 81

Evaluation of Disclosure Controls and Procedures, page 81

1. We note your disclosure that management has concluded that your disclosure controls and procedures are effective "in enabling us to record, process, summarize and report information required to be included in our periodic SEC filings within the required time period." The language that is currently included after the word "effective" in your disclosure appears to be superfluous, since the meaning of "disclosure controls and procedures" is established by Rule 13a-15(e) of the Exchange Act. Please remove the language in your future filings or revise the disclosure so that the language that appears after the word "effective" is substantially similar in all material respects to the language that appears in the entire two-sentence definition of "disclosure controls and procedures" set forth in Rule 13a-15(e).

Audited Consolidated Financial Statements, page F-1

Note 2. Summary of Significant Accounting Policies, page F-7

Goodwill, page F-14

2. As noted in your disclosure on page F-15, it appears that your market capitalization is significantly below the book value of your equity. Please advise us whether you have performed an interim impairment test subsequent to the end of your fiscal year. If not, please explain how you analyzed the difference to conclude that an impairment test is not necessary. Please explain any qualitative or quantitative factors you considered (e.g. reconciliation). If you have performed an interim impairment test, please provide us with a summary of your results in Step 1 and Step 2, if applicable.

Stock-Based Compensation, page F-20

3. We see that you have disclosed the amount of stock-based compensation expense recognized under SFAS 123R on a per share basis for each of the years presented. We note that paragraph 84 of SFAS 123R permits the per-share disclosure of the effects of adoption of SFAS 123R only in the year of adoption. Accordingly, please revise future filings to no longer disclose the per share effect of stock-based compensation.

Exhibit 31

4. We note that that the certifications filed as required by Exchange Act Rule 13a-14(a) improperly includes the title of the chief executive and chief financial officer in the introductory paragraph. In future filings, the certification should be revised to present the

exact form as set forth in Item 601(b)(31) of Regulation S-K with no modifications and no references to the titles of the chief executive or chief financial officer in the introductory paragraph.

Form 8-K filed November 12, 2008

5. You have presented a table at the foot of your consolidated statement of operations to summarize total stock-based compensation expense. We note that SAB Topic 14G prohibits the inclusion of a non-GAAP financial measure on the face of financial statements prepared in accordance with GAAP. Please tell us how your presentation of the non-GAAP measure, total stock-based compensation expense, in your furnished earnings release complies with this guidance. Alternatively, please revise the presentation in future filings to remove the total from stock-based compensation table.

6. We note that you present your non-GAAP measures in the form of a Consolidated Statements of Operations and Reconciliation of GAAP Net (Loss) Income and EPS to Non-GAAP Adjusted Net Income and EPS and to Adjusted EBITDA. This format may be confusing to investors as it reflects several non-GAAP measures, including (and not necessarily limited to) non-GAAP cost of revenues, non-GAAP amortization of intangible assets, non-GAAP general and administrative expense, non-GAAP amortization of acquired intangible assets, non-GAAP acquired in-process research and development, non-GAAP restructuring, non-GAAP (loss) income from operations, non-GAAP (loss) income before provision for income taxes, non-GAAP provision for income taxes, non-GAAP net (loss) income, non-GAAP basic and diluted net (loss) income per common and common equivalent share which have not been described to investors. In fact, it appears that management does not use these non-GAAP measures but they are shown here as a result of the presentation format. Please note that Instruction 2 to Item 2.02 of Form 8-K requires that when furnishing information under this item you must provide all the disclosures required by paragraph (e)(1)(i) of Item 10 of Regulation S-K, including a reconciliation to the directly comparable GAAP measure for **each** non-GAAP measure presented and explain why you believe the measures provide useful information to investors.
 - To eliminate investor confusion, please remove the non-GAAP consolidated statement of operations from all future filings and instead disclose only those non-GAAP measures specifically used by management that you wish to highlight for investors, with the appropriate reconciliations.
 - Please note that in the event that your Form 8-K is incorporated by reference into a 1933 Act registration statement, we may have additional questions relating to the appropriateness of this information being included in a document filed with, and not just furnished to, the Commission. At that time, we may request an amendment to the Form 8-K.

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As appropriate, please respond to this comment within 10 business days or tell us when you will provide us with a response. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your response to our comment.

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 Exchange Act of 1934 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.

In connection with responding to our comments, please provide, in writing, a 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.

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 our review of your filing or in response to our comments on your filing.

You may contact Kevin Kuhar, Staff Accountant, at (202) 551-3662 or me at (202) 551-3554 if you have questions regarding comments on the financial statements and related matters. Please contact Mary Beth Breslin at (202) 551-3625 or Jay Mumford at (202) 551-3637 if you have questions on other comments. In this regard, do not hesitate to contact me or Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 with any questions.

Sincerely,

Angela Crane
Branch Chief