



DIVISION OF
CORPORATION FINANCE

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

June 28, 2010

VIA U.S. Mail and Facsimile

Brett Scott
Chief Financial Officer
Biolase Technology, Inc.
4 Cromwell
Irvine, California 92618

**Re: Biolase Technology, Inc.
Form 10-K for the fiscal year ended December 31, 2009
Filed March 19, 2010
Form 10-Q for the fiscal quarter ended March 31, 2010
File No. 000-19627**

Dear Mr. Scott:

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 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, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 10-K for the fiscal year ended December 31, 2009

Critical Accounting Policies

Valuation of Inventory, page 43

1. We reference the disclosure on page 45 of the onetime write down of inventories related to the international subsidiary closures. Please revise future filings to discuss any significant inventory write downs and how you determined the lower of cost or market related to the inventory, including any inherent judgments, estimates or assumptions.

Results of Operations

Year ended December 31, 2009 compared with Year ended December 31, 2008

Net revenue, page 45

2. We see that revenue from Waterlase and Diode systems decreased significantly from 2008 to 2009 and that decrease is attributed to adverse worldwide economic environment and lower purchases by HSIC. We also see that in your discussion of gross profit, you indicate that there was a shift in sales mix and lower average net pricing during 2009. In future filings please discuss the nature of any changes in sales mix and include quantified disclosure of the impact of changes in unit sales versus price fluctuations.

Gross Profit, page 45

3. In future filings, please quantify the impact of each item listed as a contributing factor to the decrease in gross profit. In addition, please describe the nature of the shift in sales mix and why the shift impacted gross profit.

Liquidity and Capital Resources, page 48

4. We see that trade accounts receivable has increased while revenue has decreased. Please tell us the reasons for the increase in accounts receivable. In future filings, your discussion of liquidity and capital resources should include a substantive discussion of any known trends or any known demands, commitments, events or uncertainties that will result in or that are reasonably likely to result in your liquidity increasing or decreasing in any material way. Refer to Rule 303 of Regulation S-K.

Item 11. Executive Compensation, page 54

5. It appears that the amounts you report in the “Bonus” column were received by your named executive officers pursuant to the incentive plan described on pages 18-19 of your definitive proxy statement. Therefore, it appears those amounts should be reported pursuant to Regulation S-K Item 402(c)(2)(vii). Please revise future filings, as appropriate.

Consolidated Financial Statements

Note 2. Summary of Significant Accounting Policies

Revenue Recognition, page F-10

6. Please revise future filings to disclose how you determine the fair value of undelivered elements in sales of your laser systems.

Note 9. Segment Information, page F-28

7. Regarding the disclosure of geographic information, if revenue from external customers attributed to an individual foreign country is material, then please disclose those revenues separately in future filings. Refer to FASB ASC 280-10-50-41.

Form 10-Q for the fiscal quarter ended March 31, 2010

Exhibits 31.1 and 31.2.

8. We note that you have modified the certification to refer to the consolidated financial statements and that the identification of the certifying individual at the beginning of the certification also includes the title of the certifying individual. In future filings, please ensure the form of the certification is exactly as set out in Item 601(b)(31)(i) of Regulation S-K.

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.

Brett Scott
Biolase Technology, Inc.
June 28, 2010
Page 4

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 Kristin Lochhead at (202) 551-3664 or me at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. If you have other questions, please contact Ruairi Regan at (202) 551-3269 or Geoff Kruczek at (202) 551-3641.

Sincerely,

Kate Tillan
Assistant Chief Accountant