



DIVISION OF
CORPORATION FINANCE

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

February 8, 2011

Via Facsimile and U.S. Mail

Mr. James Dorst
Chief Financial Officer and Chief Operating Officer
SpectraScience, Inc.
11568 Sorrento Valley Rd., Suite 11
San Diego, California 92121

Re: SpectraScience, Inc.
Form 10-K for the Year Ended December 31, 2009
Filed March 31, 2010
File No. 000-13092

Dear Mr. Dorst:

We have reviewed your response dated January 27, 2011 and have the following additional comment. In our comment, 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 comment applies to your facts and circumstances, please tell us why in your response.

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

Form 10-K for the Year Ended December 31, 2009

Item 7. Management's Discussion and Analysis, page 21

Critical Accounting Policies and Estimates, page 25

1. We note your responses to prior comments 2 and 3. In order to provide investors with greater insight into the quality and variability of information regarding your financial condition and operating performance, please expand your discussion of inventory valuations and valuation of long-lived assets in this section in future filings to discuss the

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significant judgments and estimates used in determining amounts recorded in the financial statements. To the extent material, address factors such as why the accounting estimates and assumptions bear the risk of change, how you arrived at the estimates, how accurate the estimates/assumptions have been in the past, how much the estimates/assumptions have changed in the past, and whether the estimates/assumptions are reasonably likely to change in the future. Discuss the sensitivity of the estimates/assumptions to change based on other outcomes that are reasonably likely to occur that could have a material effect. Refer to SEC Release 33-8350.

You may contact Tara Harkins, Staff Accountant, at (202) 551-3639 or me at (202) 551-3643 if you have questions regarding these comments. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

Kevin L. Vaughn
Accounting Branch Chief