



DIVISION OF
CORPORATION FINANCE

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

December 21, 2010

Mr. David D. Glass, Executive Vice President and Chief Financial Officer
Veeco Instruments Inc.
Terminal Drive
Plainview, New York 11803

**Re: Veeco Instruments Inc.
Form 10-K for the Fiscal Year Ended December 31, 2009
Filed February 24, 2010
File No. 0-16244**

Dear Mr. Glass:

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 Fiscal Year Ended December 31, 2009

Item 12. Executive Compensation, page 43

1. We note your disclosure in the last paragraph on page 43 of your Schedule 14A, which you incorporate by reference, that certain factors determine the number of options and stock awards granted to each individual for their equity-based compensation. In future filings, please include substantive analysis and insight into how you made the stock and option grant determinations with respect to each named executive officer. Refer to subparagraphs (b)(1)(iii) and (v) of Item 402 of Regulation S-K. For example, please discuss and analyze how the Compensation Committee determine the actual number of shares underlying the stock options that were awarded to your named executive officers and how and why those awards varied among the named executive officers.

Item 13. Certain Relationships..., page 43

2. In future filings, please disclose the policies and procedures for the approval of your related party transactions. Refer to Item 404(b) of Regulation S-K.

Notes to Consolidated Financial Statements

Note 1 – Description of Business and Significant Accounting Policies, page F-10

3. Please revise future filings to disclose your accounting policy for income taxes. The disclosure should address what your deferred tax assets and liabilities represent, how they are initially measured, and how your tax valuation allowance is established and adjusted.

Revenue Recognition, page F-11

4. With respect to your systems sales, you state that you are generally required to install these products and demonstrate compliance with acceptance tests at the customer's facility. Further, you discuss how you consider the agreements to have two elements – the system and the installation. In connection with the system sales, you state that you recognize system revenue upon shipment or delivery. While we note your discussion of the impact of the acceptance provisions on your instrument sales, we do not see any discussion of the impact of acceptance provisions on your system sales. Please explain to us why you concluded that recognition upon shipment is appropriate in light of the acceptance provisions. Refer to SAB Topic 13.A.3.b.

Definite-Lived Intangible and Long-Lived Assets, page F-14

5. We note this disclosure addresses your policy for impairment and depreciation of long-lived assets. In future filings, please disclose how the original and subsequent carrying basis of your long-lived assets are determined.

Form 10-Q for the Fiscal Quarter Ended September 30, 2010

Results of Operations, page 21

6. We note the significant increases in your revenues in 2010 compared to 2009. In connection with the discussion of your full year 2010 results of operations to be included in your Form 10-K for the year ending December 31, 2010 includes a qualitative and quantitative discussion of the impact of price increases, volume increases, and to new products introduced. Refer to Item 303(A)(3)(iii) of Regulation S-K.
7. In future filings, please provide a discussion of your discontinued operations, and the impact of such disposal on your future liquidity and results of operations.

Form 8-K dated October 25, 2010

8. We note your presentation here of a non-GAAP measure "EBITA." However, we note from the reconciliation on page 5 that the non-GAAP measure appears to adjust for more than just interest, taxes and amortization. Please revise future filings to provide a more accurate title for the non-GAAP measure.

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 Gary Newberry at (202) 551-3761 or me at (202) 551-3643 if you have questions regarding comments on the financial statements and related matters. Please contact Gabriel Eckstein at (202) 551-3286 or Tim Buchmiller at (202) 551-3635 if you have questions on other 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