



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

January 8, 2009

Via Facsimile and U.S. Mail

Mr. John F. Rein, Jr.
Chief Financial Officer
Veeco Instruments, Inc.
Terminal Drive
Plainview, New York 11803

**Re: Veeco Instruments, Inc.
Form 10-K for the Year Ended December 31, 2007
Filed February 28, 2008
File No. 000-16244**

Dear Mr. Rein:

We have reviewed your filings and your response letter dated December 12, 2008 and we have the following comment. Where indicated, we think you should revise your documents in future filings in response to this comment. 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 our comment, 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.

Veeco Instruments, Inc.
Mr. John Rein
January 8, 2009
Page 2

Form 10-K for the Year Ended December 31, 2007

Index to Consolidated Financial Statements, page F-1

Note 1. Description of Business and Significant Acquisition, page F-9

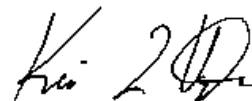
- Goodwill and Other Indefinite-Lived Intangibles, page F-12

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- 1. We note your response to our prior comment 7. Please address the following within your Critical Accounting Policies section of MD&A in future filings:
 - Disclose the reporting unit levels at which you test goodwill for impairment and your basis for that determination.
 - Since you use the discounted cash flow method, please disclose why management selected this method as being most meaningful.
 - Provide a qualitative and quantitative description of the material assumptions used and a sensitivity analysis of those assumptions based upon reasonably likely changes.
 - To the extent the valuation assumptions and methodologies used for valuing goodwill have changed since prior periods, disclose the reasons for the changes and the impact of the changes.

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

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
Branch Chief