



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

June 7, 2010

VIA U.S. MAIL and FACSIMILE

Mr. Steven W. Peterson
Chief Financial Officer
Mesa Laboratories, Inc.
12100 West Sixth Avenue
Lakewood, Colorado 80228

RE: **Mesa Laboratories, Inc.**
Form 10-K for the fiscal year ended March 31, 2009
Filed June 29, 2009
File No. 000-11740

Dear Mr. Peterson:

We have reviewed your response letter dated May 7, 2010 and filings and have the following comments. Where indicated, we think you should revise future filings 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.

Steven W. Peterson
Mesa Laboratories, Inc.
June 7, 2010
Page 2

Form 10-K for the Fiscal Year End March 31, 2009

Notes to Financial Statements, page 28

Note 10 Segment Data, page 39

1. Reference is made to your response to our prior comment number 1. In this regard, so we can continue to evaluate your response, please provide us with the sales, cost of sales, and gross margin data for the fiscal year 2008, 2007, and 2006 in a similar format as you provided for fiscal 2010 and 2009 in your response to our prior comment number 1.

Amendment no. 1 to Form 10-Q for period ended June 30, 2009
Exhibit 31

2. We note that you have deleted the language “(the registrant’s fourth fiscal quarter in the case of an annual report)” from paragraph 4(d) of the certifications required by Exchange Act 13a-14(a). In future filings, please include this language.

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

Please contact Dennis Hult at (202) 551-3618 or me at (202) 551-3212 if you have any questions regarding comments on the financial statements. Please contact Allicia Lam at (202) 551-3316 or Jay Mumford at (202) 551-3637 if you have questions on any other comments.

Sincerely,

Jeffrey Jaramillo
Accounting Branch Chief