

Mail Stop 6010

March 9, 2007

By U.S. Mail and Facsimile to (760) 438-1184

Ms. Donna G. Lee  
Chief Financial Officer  
Xenonics Holdings, Inc.  
2236 Rutherford Road, Suite 123  
Carlsbad, CA 92008-7297

**RE: Xenonics Holdings, Inc.  
Form 10-KSB for the year ended September 30, 2006  
File No. 1-32469**

Dear Ms. Lee:

We have reviewed your letter dated February 21, 2007 and have the following comments. Where indicated, we think you should revise your future documents 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.

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.

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Form 10-KSB for the year ended September 30, 2006

Item 6. Management's Discussion and Analysis or Plan of Operation, page 13

Results of Operations, page 15

Other Income / Expense, page 17

1. Please refer to prior comment 1. Your response does not fully address our prior comment. Please tell us why you believe it is appropriate to record the recovery of previous expense based on the fair value of your stock in September 2005. In this regard, please tell us why you believe it is appropriate to recognize a gain in excess of previously recorded losses on this transaction. Cite any authoritative literature upon which you are relying to support your conclusions.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter that keys your responses to our comments 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 Eric Atallah, Staff Accountant at (202) 551-3663 or me at (202) 551-3643 regarding comments on the financial statements and related matters. In this regard, do not hesitate to contact, Martin James, Senior Assistant Chief Accountant at (202) 551-3671 with any other questions.

Sincerely,

Kevin L. Vaughn  
Branch Chief