

Mail Stop 6010

May 2, 2007

Andrew Makrides, President
Bovie Medical Corporation
734 Walt Whitman Road
Melville, New York 11747

Via U S Mail and FAX [(631) 421-5821]

**Re: Bovie Medical Corporation
Form 8-K for Item 4.01
Filed April 27, 2007
File No. 0-12183**

Dear Mr. Makrides :

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comments are inapplicable or a revision is unnecessary. 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 the applicable staff person at the telephone number listed at the end of this letter.

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1. Please amend your report to include all of the information required by Item 304 of Regulation S-B. Item 304(a)(1)(ii) of Regulation S-B requires that you state whether the auditors' report on your financial statements for either of the past two years contained an adverse opinion or a disclaimer of opinion or was qualified or modified as to uncertainty, audit scope or accounting principles and, if so, a description of the nature of each adverse opinion, disclaimer of opinion, modification or qualification.

2. Please disclose the specific date on which your former auditor passed away, and disclose whether, during your two most recent fiscal years and any subsequent interim period before that date:

- you had any disagreement(s) with your former auditors on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, and

- the disagreement(s), if not resolved to the satisfaction of your former auditors, would have caused them to make reference to the disagreement(s) in their reports.

In the event of a disagreement and/or reportable event, Item 304(a)(1)(iv) of Regulation S-B specifies additional disclosures.

3. Please amend your report to include all of the information required by Item 304(a)(2) of Regulation S-B, concerning the engagement of the new accountant. State whether, during your two most recent fiscal years and any subsequent interim period, the new accountant was consulted about the items in each of subparagraphs (i) and (ii).

4. Your Commission File Number for 1934 Act filings was changed to 1-31885 when you filed Form 8-A on November 3, 2003. Please use this number for future filings.

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Please file your response and amendment via EDGAR in response to these comments within 5 business days after the date of this letter. Please contact the staff immediately if you require longer than 5 business days to respond.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing reviewed by the staff to be certain that they have provided all information investors require for an informed decision. Since the registrant and its management are in possession of all facts relating to a registrant's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the registrant acknowledging that:

- the registrant 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 registrant 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

If you have any questions, please call me at (202) 551-3606. In my absence, you may call Brian Cascio, Branch Chief at (202) 551-3676.

Sincerely,

Jeanne Bennett
Staff Accountant