



DIVISION OF
CORPORATION FINANCE

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

July 7, 2010

Richard J. Faleschini
President and Chief Executive Officer
BioSphere Medical, Inc.
1050 Hingham Street
Rockland, MA 02370

Re: BioSphere Medical, Inc.
Preliminary Proxy Statement on Schedule 14A
Filed June 10, 2010
File No. 000-23678

Dear Mr. Faleschini:

We have limited our review of your filing to those issues we have addressed in our 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 by amending your filing and providing the requested information. Where you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Background to the Merger, page 17

1. Please revise to identify and discuss the regulatory and financing considerations that your board considered to be potential risks to consummating the transaction with Company A, as mentioned in the sixth paragraph on page 22.
2. We note your disclosure in the sixth paragraph on page 22 that your board considered the fact that Company A had not received your most recent financial results a potential risk to completing the transaction. Please revise to clarify:
 - why Company A had not received your most recent financial results,
 - whether Company A received or requested your most recent financial results, and
 - whether you had any further discussions with Company A after May 5, 2010.

3. Please expand the background disclosure to discuss how your board of directors considered the risks arising from the conditions contained in the commitment letter between Merit and Wells Fargo compared to the risks you cite on page 22 relating to Company A's proposal.
4. Given your disclosure that (i) Company A expressed interest in a cash acquisition at an aggregate valuation higher than that proposed by Merit, and (ii) the potential risks to a transaction with Company A posed by "financing considerations," please advise us how you determined that it is not necessary to disclose Company A's identity.

Reasons for the Merger and Recommendation of Our Board of Directors, page 24

5. We note the reference in the last bullet point on page 25 to the "absence of a financing condition" in the merger agreement; however, given provisions in Sections 4.6 and 5.4 of the agreement, please tell us how you came to that conclusion. Please revise your disclosure to clarify the extent to which the merger transaction is subject to financing conditions given the cited provisions and the conditions to Wells Fargo's commitment to provide financing as discussed on page 35.

Financing the Merger, page 35

6. We note the third bullet point on page 35 regarding the condition that the post-merger information be "reasonably satisfactory" to Wells Fargo. Please revise to explain how this condition will operate in greater detail, including:
 - when the post-merger information will be presented to Wells Fargo,
 - the extent to which Wells Fargo has the discretion to terminate the financing agreement, and
 - the impact on the merger transaction if this condition is not met.
7. With a view toward potential disclosure, please provide us with a copy of the commitment letter between Merit and Wells Fargo, as well as any schedules, attachments or exhibits to the letter. We may have further comment after reviewing this information.

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;

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- 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.

Please contact Louis Rambo at (202) 551-3289 or me at (202) 551-3625 with any questions.

Sincerely,

Mary Beth Breslin
Senior Attorney

cc (fax): Cynthia T. Mazareas, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP