



DIVISION OF
CORPORATION FINANCE

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

March 5, 2014

Via E-mail

Michael Rice
Chief Executive Officer
BioLife Solutions, Inc.
3303 Monte Villa Parkway
Bothell, WA 98021

**Re: BioLife Solutions, Inc.
Amendments No. 3 and No. 4 to Registration Statement on Form S-1
Filed March 3, 2014 and March 5, 2014
File No. 333-192880**

Dear Mr. Rice:

We have limited our review of your registration statement 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 registration statement and providing the requested information. If 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 registration statement and the information you provide in response to these comments, we may have additional comments.

Prospectus Cover Page

1. We note your response to prior comment 1 and revised disclosures indicating that the offering does not have a minimum purchase requirement; however, your disclosures on pages 3 and 11 state that the offering will not close unless you raise sufficient capital to satisfy Nasdaq's shareholders' equity requirement. Based on your total shareholders' equity disclosed at the bottom of page 4 and the amount of aggregate debt held by the two noteholders disclosed on page 19, it appears that you need to raise at least some funds from investors in this public offering in order for the offering to close. Accordingly, please revise the registration statement throughout to clarify that this is a best-efforts, mini-max offering and address prior comments 1, 2, 3, 4 and 6.

Prospectus Summary

2. Please revise the first page of the summary to disclose prominently that the offering is contingent upon Nasdaq approval of your initial listing application. Please disclose the amount of shareholders' equity you must have in order to satisfy the relevant listing standard as well as all other material contingencies to Nasdaq approval and closing of the offering. Also, prominently disclose (i) the minimum number of units that must be sold in the offering and (2) the minimum dollar amount you need to raise in the public offering to satisfy the shareholders' equity requirement.

Plan of Distribution, page 45

3. We note your revised disclosure on page 45 concerning the terms of the escrow agreement. Please tell us the reasons why the offering might not close as to one subscriber but could still close as to another subscriber.

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 Act of 1933 and all applicable Securities 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow

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adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Joseph McCann at (202) 551-6262 or Daniel Morris, Special Counsel, at (202) 551-3314 with any questions.

Sincerely,

/s/ Daniel Morris for

Amanda Ravitz
Assistant Director

cc (via e-mail): Christopher L. Doerksen, Esq. – Dorsey & Whitney LLP