



DIVISION OF
CORPORATION FINANCE

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

February 6, 2014

Via E-mail

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

**Re: BioLife Solutions, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed January 23, 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 Summary, page 1

1. Your revised disclosure states that each unit will now consist of a share of common stock and one-half of one common stock warrant. Please tell us the impact to shareholders of owning one-half of one common stock warrant. Discuss significant restrictions or limitations imposed on holders owning less than a "whole" warrant.

Use of Proceeds, page 13

2. Based on your revised disclosure in response to prior comment 6, it appears that you do not have a specific plan for the offering proceeds. As such, please refer to the second sentence of Regulation S-K, Item 504 and state that you do not have a specific plan. Please also disclose the estimated amount of your net proceeds assuming the sale of 25%, 50%, 75% and 100% of the securities offered.

Certain Relationships..., page 36

3. Please refer to Instruction 2 to Regulation S-K, Item 404(d) and explain to us why you have revised the prospectus to remove the disclosure that you previously included under the heading "Legal Fees."

Security Ownership..., page 41

4. We refer to the third sentence of prior comment 10. The Note Conversion Agreements indicate that each noteholder's conversion obligation is conditioned upon your consummation of a "Qualified Financing." The term "Qualified Financing," however, does not appear to be defined in the Note Conversion Agreements. Accordingly, please tell us how the term is defined so that we may assess your response.

Signatures

5. Please ensure that your Principal Accounting Officer signs the registration statement.

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

Michael Rice
BioLife Solutions, Inc.
February 6, 2014
Page 3

public offering of the securities specified in the above registration statement. Please allow 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