



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

DIVISION OF
CORPORATION FINANCE

January 9, 2014

Via E-mail

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

**Re: BioLife Solutions, Inc.
Registration Statement on Form S-1
Filed December 16, 2013
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.

Registration Statement

1. Please amend your filing to include all information other than that which can be omitted per Rule 430A. For example, we note the blanks currently on the prospectus cover, on page 6 and throughout your document regarding the number of securities you are offering. Also note that information like what you currently omit on pages 18 and 19 must be disclosed based on a *bona fide* estimate of the public offering price; see section II.A.7 of Release 33-6714 (May 27, 1987).

Prospectus Cover Page

2. Please revise the third sentence of the third paragraph on the cover page to clarify whether the placement agent is or is not selling the units. Also, revise this same paragraph and the prospectus summary to highlight that this best-efforts offering does not have a minimum purchase requirement and therefore is not certain to raise any specific amount.

Risk Factors, page 8

3. Please add appropriate risk factor disclosure to highlight the possibility that the proceeds you receive may be substantially less than the maximum offering size you specify on the prospectus cover page.

Forward-Looking Statements, page 17

4. Please note that Section 27A of the Securities Act and Section 21E of the Exchange Act do not apply to statements made by issuers of penny stock. Given your disclosure on page 13 that your securities are covered by the penny stock rules, please revise to eliminate the reference to the Private Securities Litigation Reform Act of 1995.

Use of Proceeds, page 18

5. Please disclose the amount of net proceeds that you currently intend to use for each purpose identified. If you do not have a specific plan for a significant portion of the proceeds, please say so clearly and discuss the principal reasons for the offering.
6. Please quantify how you will allocate the proceeds for each disclosed purpose assuming that you sell less than the maximum amount of securities that you are offering. Include a reasonable range of potential outcomes regarding the number of securities that you might sell; for example, if reasonable, you could disclose your use of proceeds assuming that you sell 25%, 50%, 75% and 100% of securities offered.

Core Product Sales, page 22

7. Please revise to describe in greater detail the reasons for the 23% increase to your core product sales for the nine-month period presented. For instance, and without limitation, please provide a narrative discussion of the extent to which the increase is attributable to increases in prices or to increases in the volume of goods sold or to the introduction of new products. Refer to Regulation S-K, Item 303(a)(3)(iii).

Michael Rice
BioLife Solutions, Inc.
January 9, 2014
Page 3

Business, page 28

8. We note your disclosure on page 32 that approximately 46% of your fiscal 2012 revenue derived from a single customer. Please revise to identify this customer. Also, file the agreement that you reference at the bottom of page 24.

Executive Compensation, page 38

9. Please update your filing to include the disclosures required by Regulation S-K, Item 402 for your last completed fiscal year.

Security Ownership..., page 41

10. We refer to your disclosure on page 6 and elsewhere concerning the anticipated promissory note conversion by Messrs. Girschweiler and Villiger. Please revise the table to reflect their beneficial ownership assuming consummation of the debt conversion. To the extent that there are any material conditions to their obligation to exchange the notes, please disclose these obligations in this section and elsewhere as appropriate.

Plan of Distribution, page 44

11. Please revise your disclosure on page 45 to clarify that the placement agent is an underwriter within the meaning of Section 2(a)(11) of the Securities Act.

Exhibits

12. Please file Exhibits 4.2 and 5.1 prior to requesting effectiveness of 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;

Michael Rice
BioLife Solutions, Inc.
January 9, 2014
Page 4

- 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 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