



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

DIVISION OF
CORPORATION FINANCE

November 6, 2013

Via E-mail

Scott Burrell
Chief Financial Officer
CombiMatrix Corporation
310 Goddard, Suite 150
Irvine, CA 92618

**Re: CombiMatrix Corporation
Amendment No. 1 to Registration Statement on Form S-1
Filed October 25, 2013
File No. 333-191211**

Dear Mr. Burrell:

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. 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 registration statement and the information you provide in response to these comments, we may have additional comments.

Form S-1

1. We will continue to evaluate your responses to prior comments 1, 3, 4 and 5 after you provide the missing information that you say in your response you will provide. In addition, please tell us the extent to which you intend to circulate the prospectus before you file the omitted information. Also provide us your analysis of how such circulation of the prospectus with such omitted information is consistent with Section 5 of the Securities Act and related rules; cite all authority on which you rely.

Fee Table

2. We note your response to prior comment 2. Please show us in your response letter your calculations supporting the "Proposed maximum aggregate offering price" disclosed in the revised fee table.

Use of Proceeds, page 20

3. Please discuss separately in this section the proceeds from the sale of the units and the proceeds from the exercise of the warrants.

Warrants to Purchase Common Stock, page 46

4. Please clarify whether the “pre-funded” amount will be returned to the purchaser or holder of the warrants if the pre-funded warrants expire and are not exercised. If not, please tell us why you believe it is appropriate to disclose that the warrants are “pre-funded.” Also, clarify how the pre-funding feature affects the cashless exercise provisions of the warrants. Will a holder of a pre-funded warrant and a Class A warrant receive the same number of shares for each warrant upon cashless exercise?
5. We note your revisions in response to prior comment 6; however, from your revised language read together with the second sentence of the first paragraph in this section, it remains unclear whether you are intending to limit or qualify the first sentence of that paragraph and, if so, how your disclosure satisfies the requirements of Regulation S-K Item 202(c)(5). Please revise as appropriate.
6. Please note that we are unable to provide you any comfort regarding the accuracy of your analyses or conclusions provided in response to comments or in your disclosure, including your statements regarding affiliate status in the carryover paragraph at the top of page 47. We remind you of the acknowledgements that must accompany any request for acceleration of the effective date of this registration statement as indicated at the end of this letter.
7. Please revise your disclosure regarding Section 13(d) of the Securities Exchange Act of 1934 to emphasize that purchasers of warrants with “beneficial ownership blockers” are and will remain responsible for ensuring their own compliance with Regulation 13D-G, consistent with their individual facts and circumstances. Please also disclose the implications of the proviso to Rule 13d-3(d)(1)(i), which specifies that any person who acquires a pre-funded warrant with the purpose or effect of changing or influencing the control of the company, or in connection with or as a participant in any transaction having such purpose or effect, immediately upon such acquisition will be deemed to be the beneficial owner of the underlying common stock. Finally, while we will not undertake any further examination of this issue at this time, we reserve the right to make further inquiry into this matter in the future.

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.

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

Please contact Brian Soares at (202) 551-3580 or me at (202) 551-3617 with any questions.

Sincerely,

/s/ Russell Mancuso

Russell Mancuso
Branch Chief

cc (via e-mail): Parker A. Schweich, Esq.
Dorsey & Whitney LLP