



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-7010

DIVISION OF
CORPORATION FINANCE

November 8, 2006

Mail Stop 7010

By U.S. Mail and facsimile to (303) 279-7300

James E. Alexander
President
Isonics Corporation
5906 McIntyre Street
Golden, Colorado 80403

**Re: Isonics Corporation
Amendment No. 3 to Registration Statement on Form S-3
Filed October 27, 2006
File No. 333-134816**

Dear Mr. Alexander:

We have reviewed your filing and have the following comments. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

General

1. We note the discussion of the number of shares held by non-affiliates in your comment response letter furnished in conjunction with the amendment to Form S-3 filed on October 27, 2006. Please amend your registration statement to disclose the number of shares held by non-affiliates as of the most recent practicable date, excluding shares issued to Cornell Capital Partners or Roadrunner in conjunction with this transaction. In addition, the amendment should disclose the percentage of shares held by non-affiliates that are being registered under this Form S-3.
2. Please also disclose the fact that you issued shares to Cornell in payment of principal and interest since September 1, 2006 and disclose the amount.

Selling Shareholders and Plan of Distribution, page 22

3. We note the disclosure appearing immediately below the selling shareholder table refers to 47,008,821 shares of common stock outstanding on October 27, 2006,

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while on page 8 you state that there are 47,088,821 shares outstanding as of October 24, 2006. Please confirm that these calculations are consistent or, alternatively, revise throughout your document to provide consistent amounts and dates.

You may contact Dale Welcome, Staff Accountant, at (202) 551-3865 or Jennifer Thompson, Senior Staff Accountant, at (202) 551-3737 in you have questions regarding comments on the financial statements and related matters. Please contact Matt Franker, Staff Attorney, at (202) 551-3749 or me, at (202) 551-3767 with any other questions.

Sincerely,

Jennifer R. Hardy
Branch Chief

cc: Herrick K. Lidstone, Jr. (*via facsimile 303/796-2777*)
Burns, Figa & Will, P.C.
6400 S. Fiddlers Green Circle
Suite 1000
Greenwood Village, Colorado 80111