



DIVISION OF
CORPORATION FINANCE

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

September 19, 2014

Via E-mail

Ryan Ashton
Chief Executive Officer
Great Basin Scientific, Inc.
2441 South 3850 West
Salt Lake City, UT 84120

**Re: Great Basin Scientific, Inc.
Amendment No. 2 to Registration Statement on Form S-1
Filed September 8, 2014
File No. 333-197954**

Dear Mr. Ashton:

We have reviewed your registration statement and have the following 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.

Capitalization, page 40

1. Please provide us your calculation supporting the adjustment made to Additional paid-in-capital to arrive at Pro-forma Additional paid-in-capital. Please revise the filing to include a discussion of all adjustments recorded to the pro-forma financial information.
2. In this regard, we note that the capitalization table reflects the preferred shares on a post-split basis which does not agree to the June 30, 2014 balance sheet presented on page F-24. Please confirm for us whether the preferred shares were also subject the reverse split or if only the conversion feature of the preferred shares was modified to 200-1. Please revise the filing to consistently describe and disclose the amount of the preferred shares outstanding and their conversion terms.

Financial Statements, page F-1

Note 8. Common and Preferred Stock, page F-14

3. Please refer to prior comment 32 from our letter dated July 21, 2014. We note that you have not provided sufficient discussion of each factor contributing to the significant difference between the estimate fair value as of the date of the grants in the second quarter of 2014 of \$2.00 and the estimated IPO price of \$6.00 to \$7.00. This discussion should describe significant intervening events and business activities within the company and specific changes in assumptions as well as weighting and selection of valuation methodologies employed that explain the changes in the estimated fair value of the underlying common stock between these periods. We note that this significant increase in the fair value of the underlying shares in the period leading up to the initial public offering appears to have a significant impact on your financial statements.

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

Ryan Ashton
Great Basin Scientific, Inc.
September 19, 2014
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You may contact Kevin Kuhar at 202-551-3662 or Brian Cascio at 202-551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Mumford at 202-551-3637 or Mary Beth Breslin at 202-551-3625 with any other questions.

Sincerely,

/s/ Mary Beth Breslin for

Amanda Ravitz
Assistant Director

cc (via e-mail): David Marx