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VIA EDGAR AND FEDEX

January 28, 2014

U.S. Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549
Attn: Jeffrey P. Riedler
Scot Foley
Bryan Pitko
Donald Abbott
Lisa Vanjoske

**RE: Aquinox Pharmaceuticals, Inc. (f/k/a Aquinox Pharmaceuticals (USA) Inc.)
Confidential Draft Registration Statement on Form S-1
Confidentially Submitted November 18, 2013 and December 24, 2013
CIK No. 0001404644**

Ladies and Gentlemen:

On behalf of Aquinox Pharmaceuticals, Inc. ("**Aquinox**" or the "**Company**"), we are submitting this letter and the following information in response to a letter, dated January 8, 2014, from the staff (the "**Staff**") of the Securities and Exchange Commission (the "**Commission**") with respect to the Company's Confidential Draft Registration Statement on Form S-1 (the "**Confidential Draft Registration Statement**"), submitted on December 24, 2013. We are also electronically transmitting for filing a registration statement on Form S-1 (the "**Registration Statement**") and sending the Staff a hard copy of this letter, the Registration Statement and a version of the Registration Statement that is marked to show changes to the Confidential Draft Registration Statement submitted on December 24, 2013. We are also separately sending the Staff a letter requesting confidential treatment of certain exhibits to the Registration Statement.

The numbering of the paragraphs below corresponds to the numbering of the comments in the letter. For the Staff's convenience, we have incorporated your comments into this response letter in italics. Page references in the text of this response letter correspond to the page numbers in the Registration Statement. Capitalized terms used in this letter but otherwise not defined herein shall have the meanings ascribed to such terms in the Registration Statement.

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Special Note Regarding Forward-Looking Statements and Industry Data, page 45

1. We note your response to Comment 14 and reissue the comment. Please revise your disclosure to remove the statement that you “have not independently verified any third-party information.”

In response to the Staff’s comment, the Company has revised the disclosure on page 46 to remove the statement that “[i]ndustry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that each of these studies and publications is reliable, we have not independently verified any third-party information. that the Company has “not independently verified any third-party information.”

Executive Compensation, page 110

2. In your next amendment, please revise your executive compensation disclosure to reflect the compensation awarded to named executive officers during the most recently completed fiscal year ended December 31, 2013. Please also note that your Summary Compensation Table should continue to include the compensation awarded to NEOs in the fiscal year ended December 31, 2012. Please refer to Instruction 1 to Item 402(n) of Regulation S-K.

In response to the Staff’s comment, the Company has revised its executive compensation disclosure on page 108 to reflect the compensation awarded to named executive officers during the most recently completed fiscal year ended December 31, 2013 and the fiscal year ended December 31, 2012.

Please contact me at (650) 843-5636 or Gordon Empey of Cooley LLP at (206) 452-8752 with any questions or further comments regarding our responses to the Staff’s comments.

Sincerely,

/s/ Michael E. Tenta

Michael E. Tenta

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cc: David J. Main, Aquinox Pharmaceuticals, Inc.
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