



DIVISION OF
CORPORATION FINANCE
MAIL STOP 7010

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
100 F STREET, N.E.
WASHINGTON, D.C. 20549-7010

September 8, 2008

Mr. Jason S. Weber
President and Chief Executive Officer
Rimfire Minerals Corporation
700-700 West Pender Street
Vancouver, BC V6C 1G8, Canada

**Re: Rimfire Minerals Corporation
Form 20-F for Fiscal Year Ended January 31, 2007
Filed May 11, 2007
Response Letter Dated February 28, 2008
Response Letter Dated April 15, 2008
Response Letter Dated May 5, 2008
Form 20-F for Fiscal Year Ended January 31, 2008
Filed May 21, 2008
Response Letter Dated June 19, 2008
Response Letter Dated August 13, 2008
File No. 000-31100**

Dear Mr. Weber:

We have reviewed your response letter and have the following comments. Please provide a written response to our comments. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

General

1. Where comments on a particular filing's disclosure are applicable to disclosure in another filing, please consider both filings in your response to our comments and make corresponding changes to both filings. This will eliminate the need for us to repeat similar comments.

Form 20-F for the Fiscal Year Ended January 31, 2008, as Furnished With Your
Response Letter Dated August 31, 2008

Item 8 – Financial Information

Changes in Previously-Issued Financial Statements and Report of Independent
Registered Chartered Accountants

2. Please expand your disclosure to specifically address and highlight changes made to your previously issued financial statements, including changes in interest income classification and capitalized mineral interest acquisition costs (within your reconciliation to US GAAP). Specifically address paragraph 2.h of FAS 154 and CICA Handbook Section 1506.41 and include the disclosures required by paragraph 26 of FAS 154 and CICA Handbook Section 1506.49. Please include a sample of your footnote disclosure in response to this comment. In addition, please request that your auditor update their audit report in accordance with AICPA Codification of Statements on Auditing Standards AU Sections 420.12 and 508.16-.18 (as adopted by PCAOB Rule 3200T).

Statement of Cash Flows

3. Please provide us with a roll-forward that will enable us to reconcile the changes in the fair value balances of your marketable securities from January 31, 2006 to January 31, 2007, and from January 31, 2007 to January 31, 2008. Please include significant items gross of offsets. Consider including cash purchases of marketable securities, non-cash acquisitions of marketable securities recognized in revenue, other non-cash acquisitions of marketable securities, unrealized gain/loss (appreciation/depreciation in fair value), marketable securities sold for cash, and non-cash sales of marketable securities (identifying the nature of such).

Segment Information

4. We note that your segment disclosure includes a table showing “receipts, including revenues from operations, gains (losses) on marketable securities and interest income” attributable to each geographic segment. Please tell us your basis for disclosing this measure. To the extent it is disclosed as a measure of segment profit or loss reviewed by the chief operating decision maker (or otherwise regularly provided to the chief operating decision maker), please expand your disclosure to separately disclose all significant reconciling items necessary to reconcile these amounts to your financial statements. Additionally, please expand your disclosure to include segment revenue and a segment measure of profit and

loss, ensuring that the amounts per geographic segment reconcile to the total financial statement amounts. Please refer to CICA Section 1701.30-.35.

Differences Between Generally Accepted Accounting Principles In Canada And The United States – Acquisition Costs of Mineral Property Interests

5. We note in your response to our prior comment number four that you have included a schedule to reconcile the acquisition costs per your Canadian GAAP financial statements to the amount capitalized under US GAAP. Please expand your disclosure within your US GAAP reconciliation footnote to include this reconciliation.

Item 11 – Quantitative And Qualitative Disclosure About Market Risk

6. We note your proposed disclosure in response to our prior comment number two does not include prior-year comparative information. Please expand your disclosure to include summarized market risk information for the preceding year. Refer to Item 11(a)(3) of Form 20-F.

Item 15 – Controls and procedures

7. Please consider whether your amendments to your filing on Form 20-F and related financial statements impacts your previous conclusions regarding the effectiveness of your internal controls over financial reporting as of the end of the fiscal year covered by the report

If you continue to believe that your initial assessment of effectiveness is still appropriate for your amended filing, please explain to us how you are able to support that conclusion. Alternatively, please ensure that your amended filing on Form 20-F discloses management's revised conclusion on the effectiveness of your internal controls over financial reporting, i.e., that your internal controls over financial reporting were not effective as of the end of the fiscal year.

Certifications

8. Pursuant to Rule 13a-14(a) of the Exchange Act, please include certifications of the disclosure in your amended filing as an exhibit. Please also include Section 1350 certifications, as required by Rule 13a-14(b) of the Exchange Act, as an exhibit to your amended filing. The certifications should be signed and dated at the time of filing of the report. Refer to paragraphs 12 and 13 of the “Instructions As To Exhibits” of Form 20-F.

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Closing Comments

Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your responses to our comments and provides any requested information. Detailed letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

You may contact James Giugliano at (202) 551-3319 if you have questions regarding comments on the financial statements and related matters. Please contact me at (202) 551-3683 with any other questions.

Sincerely,

Jill Davis
Branch Chief