Mineral of the Rock Canyon Creek REE-fluorite deposit, British Columbia, Canada

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Objective

The Rock Canyon Creek REE-fluorite deposit is located in the British Columbia alkaline province. The deposit consists of dolostone and dolostone crackle breccia containing REE mineralization accompanied by fluorite and pyrite. The detailed mineralogy and geochemistry of the REE-bearing minerals are presented in this study.

Analytical methods and results

X-ray diffraction analysis

The minerals identified by X-ray diffraction analysis are dolomite, calcite, pyrite, and fluorite. The minerals were identified by their characteristic diffraction peaks, which are listed in Table 1. The mineralogical composition is shown in Figure 1.

SEM-EDS analysis

The minerals identified by SEM-EDS analysis are dolomite, calcite, pyrite, and fluorite. The minerals were identified by their characteristic elemental compositions, which are listed in Table 2. The mineralogical composition is shown in Figure 2.

Table 1. X-ray diffraction analysis of REE-bearing minerals from RCC-09-14

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Relative Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolomite</td>
<td>100</td>
</tr>
<tr>
<td>Calcite</td>
<td>100</td>
</tr>
<tr>
<td>Pyrite</td>
<td>6.88</td>
</tr>
<tr>
<td>Fluorite</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Table 2. SEM-EDS analysis of REE-bearing minerals from RCC-09-14

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Na</th>
<th>Mg</th>
<th>Ca</th>
<th>Sr</th>
<th>Mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolomite</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>0.76</td>
<td>24.06</td>
</tr>
<tr>
<td>Calcite</td>
<td>3.7</td>
<td>11.25</td>
<td>3.7</td>
<td>23.35</td>
<td>1.02</td>
</tr>
</tbody>
</table>

Discussion

The mineralization at Rock Canyon Creek is characterized by dolostone and dolostone crackle breccia containing REE mineralization with accompanying fluorite and pyrite. The detailed mineralogy is shown in Figure 3.

Conclusions

The mineralization at Rock Canyon Creek is characterized by dolostone and dolostone crackle breccia containing REE mineralization with accompanying fluorite and pyrite. The detailed mineralogy is shown in Figure 3.

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References


