The Mechanism of "Red" Matsukawa River.

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"Matsukawa River" in northern Nagano Prefecture is an acid river and contains much iron. Therefore, it looks red. It is known that this "reddening" phenomenon is caused by the sulfur mine in the source of the river. However, it occurs not near the source of the river but in the lower point, where the River meets the other stream. The concentration of iron goes down after the river meets the stream doesn't contain iron. We researched why the reddening phenomenon occurs at the point. The results are as follows: 1st, the following equation shows the reddening phenomenon: $2Fe^{3+} + 6H_2O \rightarrow Fe_2O_3 \cdot 3H_2O \downarrow + 6H^+$; 2nd, either of oxygen and hydrogen sulfide doesn't affect the reddening phenomenon; 3rd, the reddening phenomenon tend to occur in summer when the river rises and temperature of water rises.

