

Accepted Manuscript

Petrography and trace element signatures of iron-oxides in deposits from the Middleback Ranges, South Australia: from banded iron formation to ore

William Keyser, Cristiana L. Ciobanu, Nigel J. Cook, Geoff Johnson, Holly Feltus, Steve Johnson, Marija Dmitrijeva, Kathy Ehrig, Phung T. Nguyen

PII: S0169-1368(17)30609-1

DOI: <https://doi.org/10.1016/j.oregeorev.2018.01.006>

Reference: OREGEO 2451

To appear in: *Ore Geology Reviews*

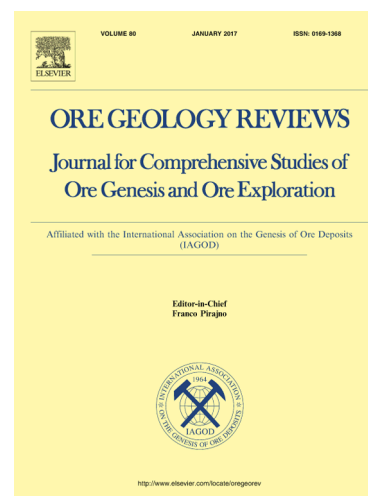
Received Date: 9 August 2017

Revised Date: 10 December 2017

Accepted Date: 10 January 2018

Please cite this article as: W. Keyser, C.L. Ciobanu, N.J. Cook, G. Johnson, H. Feltus, S. Johnson, M. Dmitrijeva, K. Ehrig, P.T. Nguyen, Petrography and trace element signatures of iron-oxides in deposits from the Middleback Ranges, South Australia: from banded iron formation to ore, *Ore Geology Reviews* (2018), doi: <https://doi.org/10.1016/j.oregeorev.2018.01.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Petrography and trace element signatures of iron-oxides in deposits from the Middleback Ranges, South Australia: from banded iron formation to ore

William Keyser^{1,*}, Cristiana L. Ciobanu¹, Nigel J. Cook¹, Geoff Johnson², Holly Feltus², Steve Johnson², Marija Dmitrijeva¹, Kathy Ehrig³, Phung T. Nguyen²

¹*School of Chemical Engineering, The University of Adelaide, Adelaide, SA, 5005, Australia*

²*SIMEC Mining, P.O. Box 21, Whyalla, SA 5600, Australia*

³*BHP Olympic Dam, Adelaide, SA 5000, Australia*

Revised manuscript, 10th December 2017

Abstract

The Middleback Ranges is a major iron ore belt in the southeastern region of the Gawler Craton, South Australia, interpreted to be of BIF origin. Iron ore deposits are hosted within ~2550 Ma metasedimentary rocks of the Middleback Group and occur as a series of N-S trending hills, forming a ~60 km-long magnetic anomaly. A petrographic-geochemical study of iron-oxides from BIFs and iron ores was undertaken on samples from thirteen locations spanning the strike of the belt. Iron-oxides are texturally diverse due to multiple processes accompanying and postdating ore formation. Primary magnetite features preserved in the southern segment of the belt display distinct overprinting features (e.g., increased porosity, reworked grain boundaries) and multiple generations of growth associated with deposition of trace minerals, including native gold. Northwards along strike, this overprint is expressed by the pseudomorphic replacement of magnetite by hematite (martite) and is locally associated with brecciation, the

* Corresponding author. william.keyser@adelaide.edu.au

Download English Version:

<https://daneshyari.com/en/article/8909824>

Download Persian Version:

<https://daneshyari.com/article/8909824>

[Daneshyari.com](https://daneshyari.com)