

rather than the mean, and the median of the absolute deviation of all analyses from the median (the median absolute deviation, or MAD), rather than the SD. A positive anomaly is then defined as the median + 2MAD.

Keeping in view the above definitions, the anomalous concentration of silver in the range 2–5 ppm found in areas of Rajasthan needs to be further validated after careful detailed studies and discussions with the supporting updated references as on date.

On p. 160, the authors claim that ‘The importance of SRC (Siwana Ring Complex) for its potential for uranium, thorium, rare metals and REE was realized by AMD in the late 1950s’. There is only one paper by AMD⁸ (ref. 5 in the manuscript¹, published in 1996) which summarizes the work carried out by AMD during the period 1976 to 1996. It was stated in this paper⁸ that ‘Detailed chemicomineralogical investigations of these dyke samples are underway’. In addition, the following conclusions are drawn in this communication⁸ (p. 858): ‘In view of the anomalous abundances of these strategic elements in them, these dykes and the remaining western half of granite ring needs further detailed investigations to evaluate their trace element potential and economic feasibility for possible exploitation in future.’ The authors’ should have summarized the detailed findings supported by the references. At the same time, the authors’ stated that¹ ‘The volcano-plutonic complex has been extensively studied for its stratigraphy, geology, structure, petromineralogy, geochemistry and geochronological aspects’¹⁻⁴.

From table 1 of the paper¹, U/Th radiometric data, except at Mawri area, are rich in thorium. Therefore, leachability/recovery of uranium from such a matrix needs to be investigated. It is clear that since 1950, AMD has not carried out any systematic detailed survey of this area. There is no new information compared to the earlier publication by AMD⁸ in 1996.

The authors are advised to summarize the results of detailed chemicomineralogical investigations of these volcano-genic multimetal radioactive mineralized dykes carried out by AMD since 1950, together with the economic feasibility for their possible exploitation in future.

1. Bidwai, R., Srinivasan, S., Nanda, L. K., Banerjee, A., Bangroo, P. N., Rai, A. K. and Parihar, P. S., *Curr. Sci.*, 2014, **106**, 159–162; Erratum, *Curr. Sci.*, 2014, **106**, 367.
2. *Indian Minerals Yearbook 2012 (Part-I) 51st Edition (Advance Release)*, State Reviews (Rajasthan), Ministry of Mines, Government of India, Indian Bureau of Mines, Nagpur, 2013; www.ibm.gov.in
3. Butterman, W. C. and Hilliard, H. E., Open-file report 2004-1251, US Geological Survey, Reston, Virginia, 2005; <http://www.usgs.gov/pubprod>
4. Deb, M., Kaur, G. and Sarkar, S. C., Met-allogeny, 2008; Earth Processes and Resources.pdf; <http://nsdl.niscair.res.in> and reference cited therein.
5. <http://www.frontiermining.kz/sections/Glossary>
6. US Geological Survey Bulletin, p. B-12, Google Books Result, 1983; books.google.co.in/books?id=FCXwAAAAMAAJ
7. <http://www.geol.umd.edu/facilities/lmdr/EconGeolTerms.pdf>
8. Jain, R. B., Miglani, T. S., Kumar, S., Swarnakar, B. M. and Singh, R., *Curr. Sci.*, 1996, **70**(9), 854–858.

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Response:

Rathore refers to the discrepancy in the number of samples in the area vis-à-vis samples analysed for Ag. We wish to mention that, the theme of the paper was to present the distribution of Ag in the various lithounits in the Siwana Ring Complex (SRC) and the rocks prevailing along the margin, representing unique geological setting and geological environment. In concurrence to the theme of the paper, population of the samples analysed for Ag outnumbered those analysed for other elements. Hence, the difference lies in the number of samples analysed as indicated by Rathore.

Rathore wants to make a point regarding the economics of the silver deposits

and silver as a by-product from Zn–Pb–(Ag) deposits of Rajasthan. The data presented in support are indeed valid. However, he seems to have missed the objective of our paper, which was to report the initial data representing the anomalous concentration of Ag. There is no mention of economic viability of Ag in the analysed rock samples. Further, data on Ag in various rock units of SRC have not been reported earlier in the published literature.

As regards the much ado about the word ‘anomalous’, it may be well appreciated that we have compared natural concentration of Ag in various/different lithologies and those prevailing in SRC, which clearly reveals that concentration of Ag in different lithologies at places exceeds more than 100 times that of the natural background/average abundance of Turekian and Wedepohl (1961). Such values of Ag judged by any parameter, would always fall under the ‘anomalous’ category (tables 2 and 3 in our paper). Further mincing words such as anomaly and threshold ($X+2\delta$ or MAD) is beyond the scope of the paper.

We are aware of earlier investigations of AMD mostly targeting uranium, rare metals and REE, mainly confined to the southern margins of SRC and Siwana Fort Hill in the central Caldera, the details of which are well documented in the 1996 publication of AMD.

Rathore has also commented about leachability/recovery of uranium and U/Th ratio. It may be noted that this was not the prime objective of our paper and hence was not presented as key points for arriving at any conclusion. In fact, we just wanted to bring it to the notice of the readers that uranium values are also associated with the samples analysed considering the probability of locating multi-elemental deposits, which is the need of the hour. Such topics may form the subject of an ensuing publication on the study area, once sizeable data to that effect are accrued and interpreted.

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