

Review Form 3

Journal Name:	International Research Journal of Pure and Applied Chemistry
Manuscript Number:	Ms_IRJPAC_123500
Title of the Manuscript:	Geochemical modeling and quality assessment of the surface waters from the Mouhoun River system, Burkina Faso: Implications of water–rock interactions and anthropogenic activities
Type of the Article	

Review Form 3

PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback (Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	This manuscript is significant for the scientific community as it provides a comprehensive analysis of the geochemical processes and anthropogenic influences affecting the water quality of the Mouhoun River system. By identifying the sources and distribution of major ions and heavy metals, it offers valuable insights into the environmental impacts of human activities such as agriculture and artisanal mining. The use of advanced geochemical modeling and statistical analyses enhances the understanding of water-rock interactions and heavy metal mobility, which is crucial for developing effective water resource management strategies. I appreciate the manuscript's thorough methodology and its potential to inform sustainable practices in water-scarce regions.	
Is the title of the article suitable? (If not please suggest an alternative title)	Suitable	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	Yes	
Are subsections and structure of the manuscript appropriate?	Yes	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	This manuscript is scientifically robust and technically sound due to its comprehensive and methodical approach to data collection and analysis. The use of advanced geochemical modeling tools like Visual MINTEQ and MINEQL+ ensures accurate evaluation of water-rock interactions and heavy metal speciation. The statistical rigor, demonstrated through multivariate analyses and principal component analysis, provides a clear understanding of the factors influencing water quality. Additionally, the manuscript's adherence to established scientific protocols and its thorough validation of results through comparison with global data underscore its reliability and credibility.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	References are sufficient and recent.	
<u>Minor</u> REVISION comments Is the language/English quality of the article suitable for scholarly communications?	English quality of the article suitable. But few minor revision you have to do 1. Next to reference 3 and 4 there are two pulstop.	
<u>Optional/General</u> comments	<ol style="list-style-type: none"> 1. In Fig. No 1 and 2 there are only 5 sample location available but in paper it mention 15 sample location, please clarify it. 2. How you measure the major inion and cation of water sample, either mention the methodology or give the reference to whom you follow. Also metion the ionic balance error of major anion and cation. 	

Review Form 3

PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

Name:	Saubhagya Ranjan Mahapatra
Department, University & Country	Chandigarh University, India