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Cover Image

Sidoarjo mudflow with Mount Arjuno Welirang in the background, November 2022

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A Preface from Editor-in-Chief

Dear Riset IJGM Readers,

It is our privilege to present the second edition of Volume 32 of Riset Geologi dan Pertambangan, Indonesian Journal of Geology and Mining (Riset IJGM). Our journal publishes high-quality peer-reviewed research papers in geology, mining, applied geophysics, and other earth science-related topics.

This edition includes five articles that were reviewed by experts prior to publication. In the first article, Pitaloka et al. investigated paleochannel identification using radar and optical images on placer deposits in Bangka Barat Regency. Their study supports exploration activities in Indonesia, particularly in delineating placer areas remotely. Eleven traces of paleochannels have been well identified, with their occurrences generally associated with meanders, open areas, and near the coast. The detected paleochannels are usually purple to dark in the color composite of the ALOS 2 PALSAR 2 image. These detected rivers are in pink to purplish-green zones and randomly appear. They suggest that the next step of this study is geophysical surveys, followed by geological mapping or shallow drilling. Moreover, field observation activities have also become effective and efficient because the targets have been well-defined. Furthermore, the field survey results validated the image interpretation.

In the second article, Sarah summarizes the present research and challenges ahead of Indonesia's land subsidence hazards, particularly subsidence cases across the big cities on Java Island, Jakarta, Semarang, and Bandung. She mentioned that Land subsidence in Jakarta, Bandung, and Semarang is still ongoing at a high rate. Its mechanism is highly influenced by excessive groundwater withdrawal, although other natural and anthropogenic factors also play a part. Land subsidence is likely to occur in many areas underlain by soft, compressible deposits, such as the North Coast of Java, East Sumatra, and Kalimantan. She proposed prevention and mitigation measures that combine the physical method and administrative regulation.

Ghiffari and Widodo discuss finding the optimal location for artificial recharge to maintain water balance in Cisangkuy rivershed using a combination of Fuzzy logic and genetic algorithm optimization. The article describes precisely that Banjaran area in the northern part of Cisangkuy sub-watershed is the most appropriate location for artificial recharge.

In the fourth article, Anatoly and Rofikoh report a dewatering requirements assessment for the Central Kalimantan NCP open pit gold mine in the third article. The research area has a high rainfall intensity of 86.23 mm/day over a two-year return period, with an observed runoff of 0.72 m³/s, as determined by the evaluation of precipitation data from 1994 to 2018. Due to the relatively massive rock conditions, most water drained from the NCP pit comes from rain and runoff rather than groundwater. An open channel perimeter drainage was constructed around the perimeter pit to prevent water from entering the mine. Additionally, a dewatering pump was required to maintain a balance between incoming and departing water. Therefore, the authors suggest that the open pit at NCP be equipped with two pumps with a combined flow rate of 1300 m³/hour. Furthermore, according to the life of mine plan, this NCP open pit mine dewatering program will run for two years.

Finally, the fifth article, by Farisan and Rachman, elucidates carbonate rocks north of West Jiwo Hills Bayat concerning the indication of thrust belt development in the southern Central Java. The carbonate rocks belong to Oyo Formation that was deposited in Middle Neritic bathymetric zone. The structural geology phenomenon kinematically indicates the impact of the transpressional movement (flower structure). Thus, they suggest that the studied area was an uplifted basement due to imbricated thrusts rather than horst or paleo-basement high.

Riset IJGM will receive only an English manuscript in our subsequent publication in 2023. We encourage all authors to consider and submit your results to Riset IJGM. We sincerely acknowledge the outstanding reviewers who support reviewing the articles submitted to our journal and all the authors for their valuable contributions to this volume of Riset IJGM. We recognize the editors for their continuous support of Riset IJGM. Riset IJGM would not have been successful without your outstanding support and dedicated work.

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