

SARI

Daerah penelitian secara administrasi mencakup seluruh Kabupaten Pacitan, Provinsi Jawa Timur, seluas 1412 km². Daerah penelitian di Kabupaten Pacitan sangat menarik dan telah lama dikenal mempunyai potensi bahan galian logam yang besar. Integrasi dan analisis data spasial dalam pencarian potensi mineralisasi emas dan logam dasar dilakukan berdasarkan data-data geologi yang tersedia sehingga dapat membantu identifikasi daerah yang berpotensi untuk eksplorasi mineral.

Data geologi dari peneliti terdahulu dipakai dalam pembuatan peta *evidence*, seperti data litologi, data struktur, data kontur, data alterasi yang diturunkan dari citra ASTER. Dari data beberapa data diatas menghasilkan enam peta *evidence* yaitu kelurusan NE-SE, kelurusan NW-SE, batuan induk (hostrock), batuan intrusi (heatsource), alterasi kaolinit dan alterasi oksida besi. Kemudian masing-masing peta *evidence* dianalisis dengan menggunakan metode *weight of evidence*, sehingga menghasilkan peta *favorable* dan diuji validasinya menggunakan uji *conditional independence* (CI), uji dengan *chi square* berupa *pairwise test* CI dan *overall test* CI. Kemudian dilakukan analisis perhitungan untuk menghasilkan peta *probabilitas* posterior. Peta potensi mineral (peta *posterior*) dilakukan validasi (*field checking*) dalam menentukan klaster zona target eksplorasi selanjutnya.

Peta *favorable* memprediksi sekitar 27,61% (389,83 km²) termasuk zona *favorable* dan sekitar 72,39% (1021,79 km²) termasuk zona non *favorable* di mana kehadiran deposit emas dan logam dasar dalam peta ini sebanyak 59 deposit atau 96,72% pada zona *favorable* dan sebanyak 2 deposit atau 3,28% pada zona non *favorable* daripada model deposit, sedangkan untuk validasi deposit kehadiran mineralisasi pada zona non *favorable* 5 deposit hadir (22,3%) sedangkan pada zona *favorable* sebanyak 17 deposit hadir (77,27%). Zona *favorable* dibagi menjadi tiga kelas, potensi tinggi, potensi menengah dan potensi rendah. Daerah yang menjadi target area ditentukan berdasarkan validasi lapangan zona *favorable* multiklas dan memiliki probabilitas paling tinggi, selanjutnya dibagi menjadi lima klaster area potensi zona mineralisasi. Zona 1 terletak di Kecamatan Arjosari, Kecamatan Punung dan Kecamatan Nawangan. Zona 2 meliputi Kecamatan Bandar, Kecamatan Tulakan, Kecamatan Tegalombo, dan Kecamatan Ngadirojo. Zona 3 terletak di Kecamatan Nawangan bagian utara. Zona 4 terletak di bagian sebelah timur dari Kecamatan Tegalombo sedangkan Zona 5 terletak di Kecamatan Kebonagung, Kecamatan Tulakan dan Kecamatan Ngadirojo.

Kata kunci: SIG, *weight of evidence*, pemetaan potensi mineral, Kabupaten Pacitan

ABSTRACT

Research areas include the administration of all area of Pacitan, East Java Province, covering an area of 1412 km². The research area in Pacitan is very interesting and has been long known have a potential for economic metal and minerals. Integration and analysis of spatial data in the quest for potential for gold and base metal mineralization is based on geological data are available that can assist with identification potential of regions for the mineral exploration.

Geological data from previous researchers used in the manufacture of the map evidence, such as data lithological, structural data, contour data, alteration of data derived from ASTER image. From the data above data yield some evidence that six straightness map NE-SE, straightness NW-SE, the parent rock (hostrock), intrusive rocks (heatsource), kaolinite alteration and iron oxide alteration. Then each map evidence analyzed by using weight of evidence, resulting in favorable maps and validation tested using test conditional independence (CI), the chi-square test in the form of pairwise test and overall test CI CI. Then analysis calculations to produce posterior probability map. Mineral potential maps (map posterior) validation (checking field) to determine the next cluster target zone exploration.

Map favorable predicts approximately 27,61% (389,83 km²) including the favorable zone and approximately 72,39% (1021.79 km²) including non-favorable zone where the presence of gold and base metal deposits in this map as much as 59 deposit or 96,72 % in the favorable zone and as sign as two deposit or 3,28% on a non-favorable zone than the model of the deposit, while the deposit to validate the presence of non favorable mineralized zone 5 deposit is present (22, 3%), while in the favorable zone as much as 17 deposit is present (77,27%). Favorable zones are divided into three classes, high potential, intermediate potential and low potential. Target area is determined based on field validation multiclass favorable zone and has the highest value of posterior probability, is further divided into five cluster areas of potential mineralized zones. Zone 1 is located in Arjosari Sub-district, Punung Sub-district and Nawangan Sub-district. Zone 2 includes the Bandar Sub-district, Tulakan Sub-district, Tegalombo Sub-district and Sub-district Ngadirojo. Zone 3 is located in the northern part of the Sub-district Nawangan. Zone 4 is located at the east of the Tegalombo Sub-district and Zone 5 located in Tulakan Sub-district and Ngadirojo Sub-district.

Keyword: SIG, *weight of evidence*, mineral potential mapping, Pacitan District