

EXPLORATION OF HYDROTHERMAL GOLD & COPPER DEPOSITS IN NW IRAN WITH GIS-BASED INTEGRATION MODELS

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THE PURPOSE of GIS studies is not only TO PROVIDE AN APPROPRIATE PLATFORM FOR DATA COLLECTION & ORGANIZATION, BUT TO SUPPORT MAKING DECISIONS BASED ON SPATIAL DATA. THE MAJOR GOAL OF THIS GIS PROJECT IS TO ACCESS MINERAL POTENTIAL MAP THAT HELPS TO DECIDE PRIORITIES OF DIFFERENT AREAS FOR FUTURE EXPLORATIONS OF GOLD & COPPER POTENTIALS HYDROTHERMAL DEPOSITS IN NW IRAN. EVIDENCE MAPS WERE CREATED BASED ON THE EXPLORATION MODEL OF HYDROTHERMAL GOLD AND COPPER DEPOSITS. Evidences were divided into SIX FACTORS: STRATIGRAPHIC, GEOCHEMICAL, AIRBORN GEOPHYSICS, ALTERATION PATTERNS, FAULT DISTRIBUTION, AND LOCATION OF KNOWN DEPOSITS. WEIGHTS OF EVIDENCE METHOD WAS APPLIED TO ASSIGN WEIGHTS FOR DIFFERENT CLASSES OF EVIDENCE MAPS AND TO GENERATE A MINERAL POTENTIAL MAP. THE FINAL MAP SHOWS A NUMBER OF PROSPECTIVE AREAS IN TERMS OF POSTERIOR PROBABILITY. SUGGESTED AREAS BASED ON THIS STUDY WERE CHECKED ON THE FIELD AND SEVERAL NEW MINERAL OCCURRENCES WERE DISCOVERED.