Geochemical Atlas – Erzgebirge and Vogtland

Mercury in stream sediments

Mercury (Hg) shows a slightly right skewed log distribution. The highest measured concentration is 1.74 mg/kg; the lowest is inferior to the detection limit of 0.005 mg/kg. The arithmetic average of Hg is 0.06 mg/kg, the median is 0.04 mg/kg. Hg shows a slight affinity to sedimentary and metasedimentary rocks of Ordovician to Permian age. Areas with important concentrations (Hg > 0.16 mg/kg) coincide with known natural Hg occurrences such as a 4 km wide area in the Devonian syncline northeast of the Neumark U deposit, a spot north of Schneeberg in Ordovician metasediments and an approx. 7 sqkm large area east of Hainichen where Proterozoic gneisses and Carboniferous sedimentary rocks occur. Similar concentrations are reached in the Freiberg mining district, possibly augmented during historic processing from the use of Hg for extraction and amalgamation. Elevated Hg also coincides with the Schneckenstein U deposit and with a circular area in Ordovician metapelites and siliceous shales further southwest, at the Czech border east of Adorf, where Mo, Cd, As, Sb and Se are also elevated. Furthermore, an area of 7 km E-W-extension with Hg > 0.1 mg/kg is located in Ordovician micaschists and phyllites south of Stollberg. Concentrations of Hg > 0.04 mg/kg characterise the entire northern Erzgebirge rim. Low concentrations of mercury Hg < 0.025 mg/kg coincide with parts of the Eibenstock, Kirchberg and Bergen granites and with orthogneisses of the central and eastern Erzgebirge. Additionally, antimony shows good correlation with mercury throughout the study area.

Project partners:

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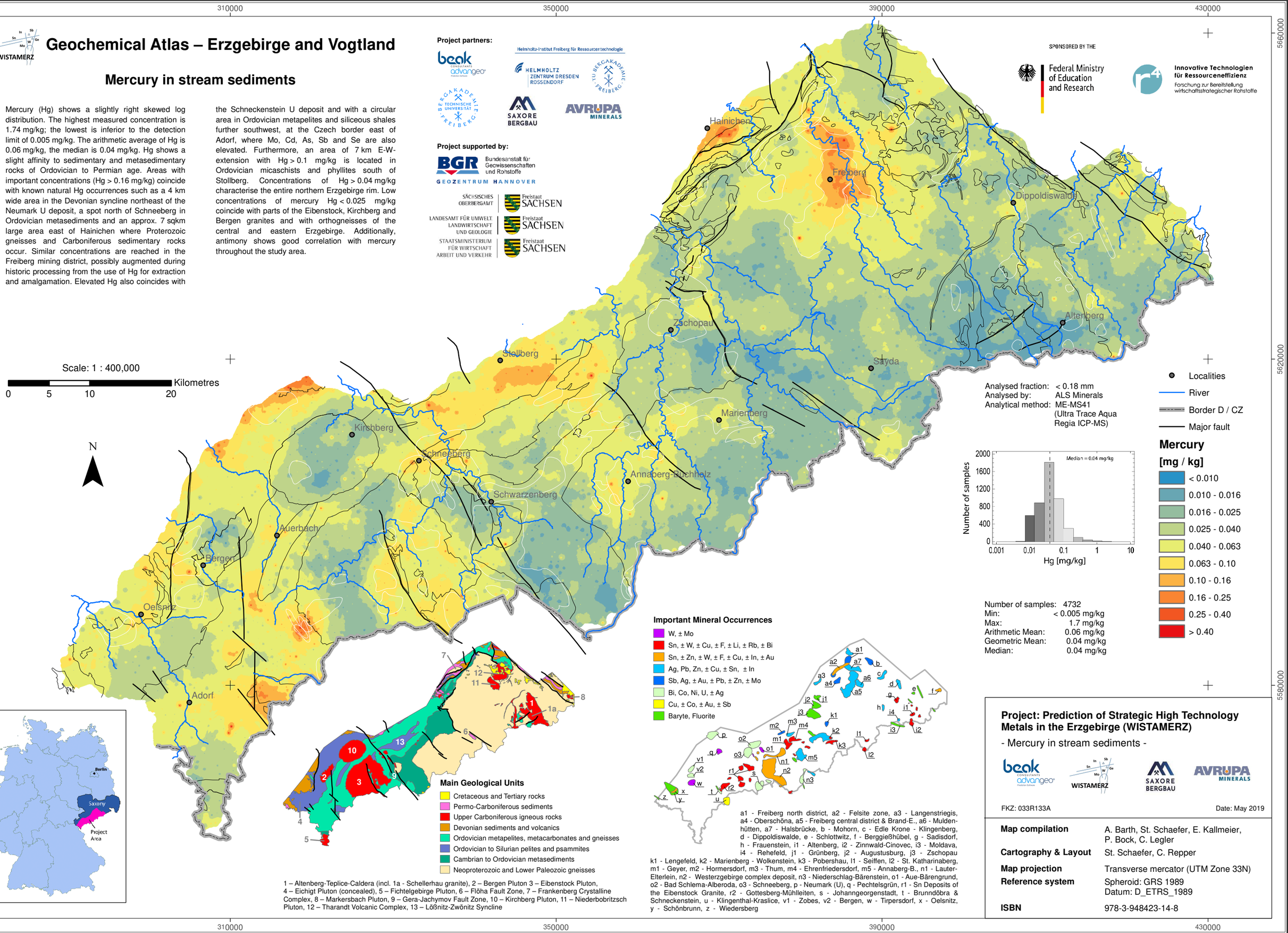

1 – Altenberg-Teplice-Caldera (incl. 1a - Schellerhau granite), 2 – Bergen Pluton 3 – Eibenstock Pluton, 4 – Eichigt Pluton (concealed), 5 – Fichtelgebirge Pluton, 6 – Flöha Fault Zone, 7 – Frankenberg Crystalline Complex, 8 – Markersbach Pluton, 9 – Gera-Jachymov Fault Zone, 10 – Kirchberg Pluton, 11 – Niederbobritzsch Pluton, 12 – Tharandt Volcanic Complex, 13 – Lößnitz-Zwönitz Syncline

a1 - Freiberg north district, a2 - Felsite zone, a3 - Langenstriegis, a4 - Oberschöna, a5 - Freiberg central district & Brand-E., a6 - Muldenhütten, a7 - Halsbrücke, b - Mohorn, c - Edle Krone - Klingenberg, d - Dippoldiswalde, e - Schlottwitz, f - Berggießhübel, g - Sadisdorf, h - Frauenstein, i1 - Altenberg, i2 - Zinnwald-Cinovec, i3 - Moldava, i4 - Rehefeld, j1 - Grünberg, j2 - Augustusburg, j3 - Zschopau k1 - Lengefeld, k2 - Marienberg - Wolkenstein, k3 - Pobershau, l1 - Seiffen, l2 - St. Katharinaberg, m1 - Geyer, m2 - Hormersdorf, m3 - Thum, m4 - Ehrenfriedersdorf, m5 - Annaberg-B., n1 - Lauter-Elterlein, n2 - Westerzgebirge complex deposit, n3 - Niederschlag-Bärenstein, o1 - Aue-Bärengrund, o2 - Bad Schlema-Alberoda, o3 - Schneeberg, p - Neumark (U), q - Pechtelsgrün, r1 - Sn Deposits of the Eibenstock Granite, r2 - Gottesberg-Mühlleiten, s - Johanngeorgenstadt, t - Brunndöbra & Schneckenstein, u - Klingenthal-Kraslice, v1 - Zobes, v2 - Bergen, w - Tirpersdorf, x - Oelsnitz, y - Schönbrunn, z - Wiedersberg

Project: Prediction of Strategic High Technology Metals in the Erzgebirge (WISTAMERZ)

- Mercury in stream sediments -

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