Printed by the Geological Survey of Ethiopia in cooperation with the Czech Republic Development Cooperation - 2013

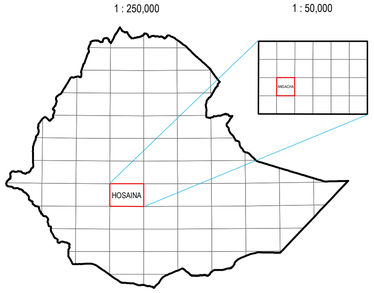
SET OF GEOSCIENCE MAPS OF ETHIOPIA AT SCALE 1 : 50,000

HYDROGEOLOGICAL MAP

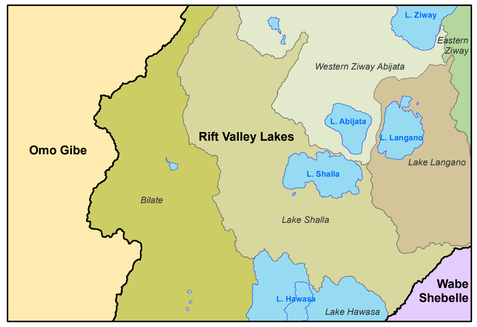
Editor: Jiří Šíma

Subsheet 0737-D2 Angacha

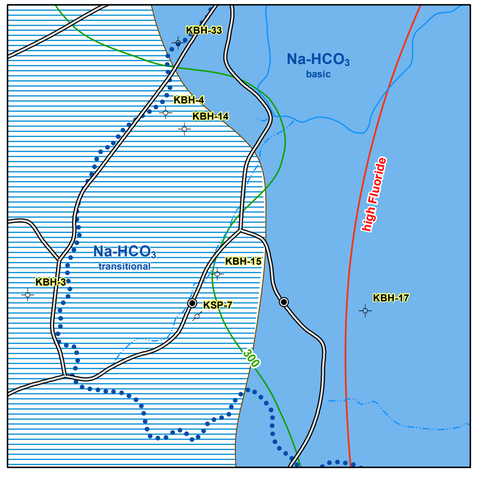
MAP SHEET INDEX



SCHEME OF BASINS AND SUB-BASINS

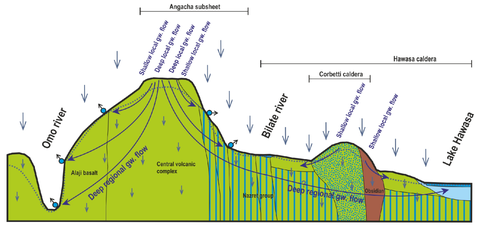


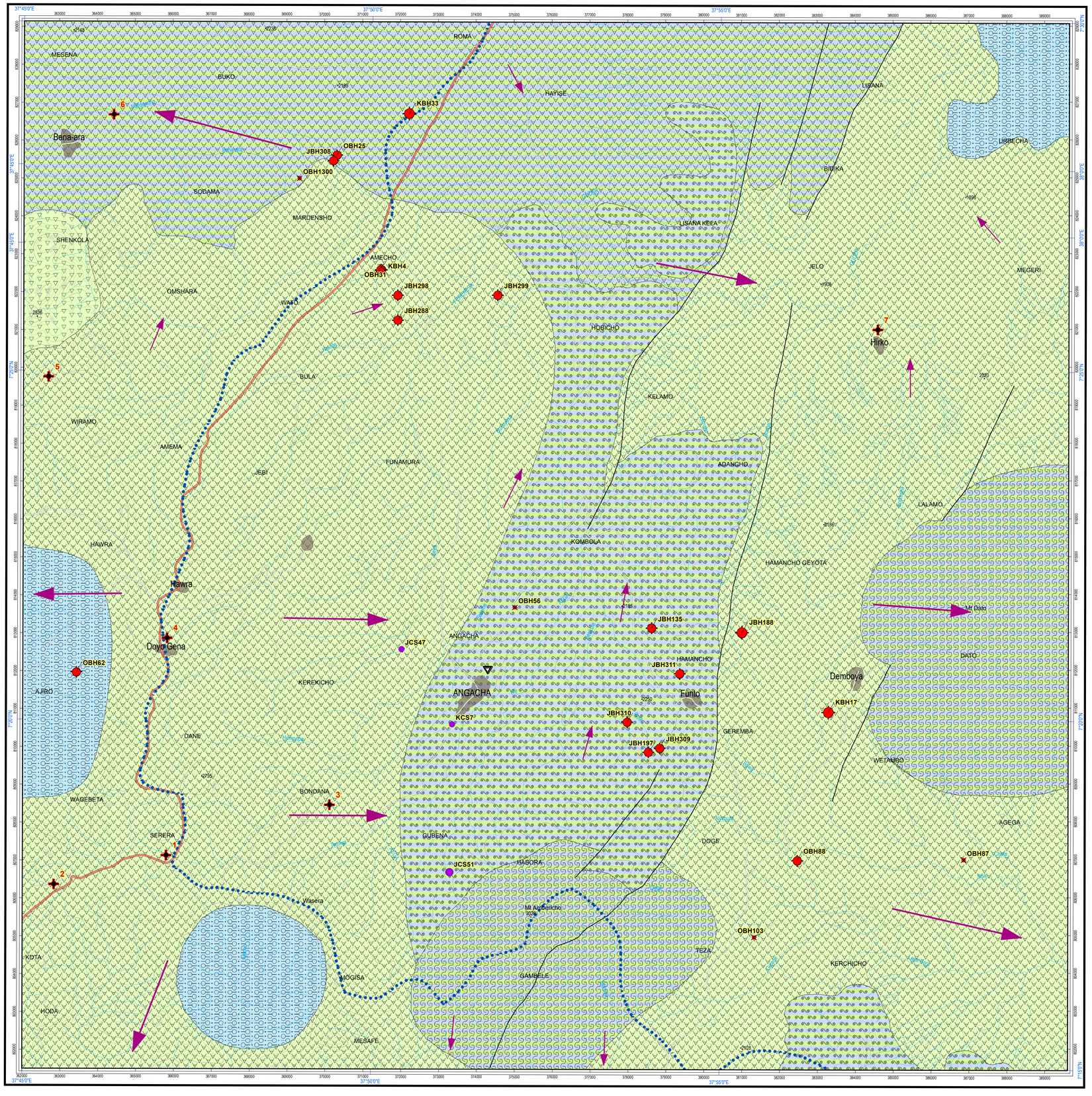
HYDROCHEMICAL MAP



Green line – TDS in mg/l
Red line – the area where F content exceeds drinking water standards

HYDROGEOLOGY SCHEME





Set of Geoscience Maps of Ethiopia at Scale 1 : 50,000
Hydrogeological map of Hawasa subsheet
Collaborators: Kefale T., Webanchi F., Zewdu Y.
Digital cartography: A. Orgoň, D. Čížek

N W E S

1 0 1 2 3 4
Kilometres

1 0 1 2
Miles

1 : 50,000
Contour interval: 50 meters

Coordinate system:
Blue numbers: longitude & latitude
Black numbers: UTM - zone 37 in meters
Projection: Transverse Mercator
Ellipsoid, Datum: Clarke 1880, Adindan

Topography derived from Ethiopia 1 : 50 000 scale maps
Ministry of Land Reform and Administration
(Survey and Mapping Department)

LEGEND

GROUNDWATER AND ROCKS

1 Extensive and moderately productive or locally developed and highly productive porous aquifers (T = 1.1–10 m²/d, q = 0.011–0.1 l/s.m, with spring and well yield Q = 0.51–5 l/s). The aquifers consist of Quaternary lacustrine and fluvial sediments.

2 Extensive and moderately productive fissured aquifer (T = 1.1–10 m²/d, q = 0.011–0.1 l/s.m, with spring and well yield Q = 0.51–5 l/s). The aquifers consist of ignimbrite – Hawasa rhyolite ignimbrite and Hawasa basalt, tuff and scoria cones.

3 Extensive and moderately or locally developed and highly productive mixed porous and fissured aquifers (T = 1.1–10 m²/d, q = 0.011–0.1 l/s.m, with spring and well yield Q = 0.51–5 l/s). The aquifers consist of sequences of sedimentary, coherent volcanic rocks, pyroclastic rocks of post-caldera Central volcanic complexes, and pumiceous pyroclastics related to Corbetti ignimbrites.

4 Shallow groundwater flow direction

5 Deep groundwater flow direction

SURFACE WATER AND HYDROGRAPHY

6 Climatic station

7 Main basin surface water divide

8 Sub-basin surface water divide 1st order

9 Watercourse

10 Indefinite stream

MANMADE HYDROGEOLOGICAL FEATURES

11 Borehole with yield 0.5 - 5 l/s

12 Borehole with yield greater than 5 l/s

13 Borehole not tested / yield not known

14 Proposed drilling site

SPRINGS

15 Spring with yield 0.05 - 0.5 l/s

16 Spring with yield 0.5 - 5 l/s

LITHOLOGY

17 Polygenetic sediment, re-sedimented pyroclastic, clay, diatomite

18 Obsidian

19 Rhyolite

20 Welded and non-welded ignimbrite

21 Undifferentiated pyroclastic

GEOLOGICAL INFORMATION

22 Normal fault observed

23 Lithological boundary observed