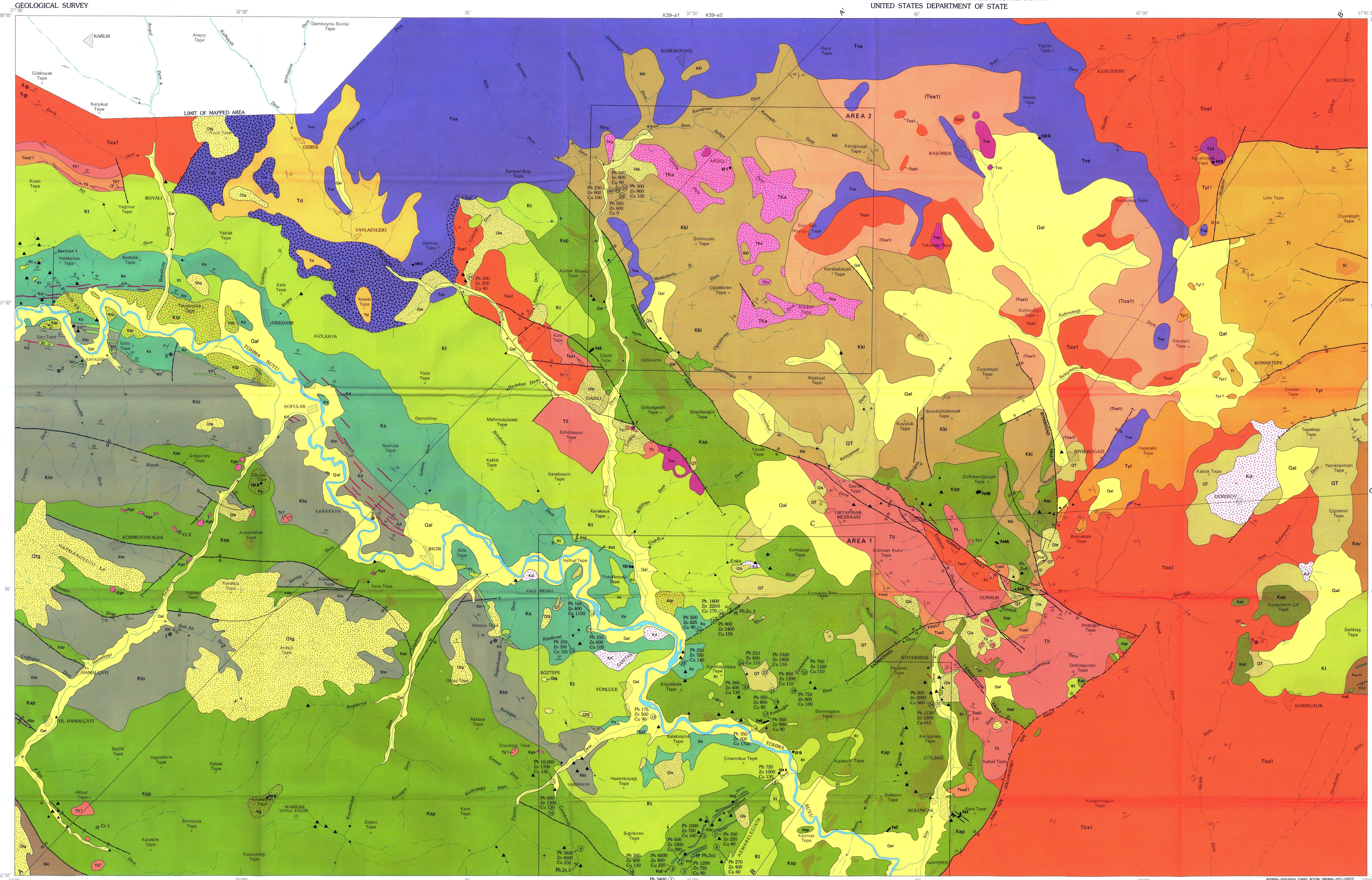
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
MADEN TETKİK VE ARAMA ENSTİTÜSÜ
UNDER THE AUSPICES OF THE
GOVERNMENT OF TURKEY AND AGENCY FOR INTERNATIONAL DEVELOPMENT
UNITED STATES DEPARTMENT OF STATE

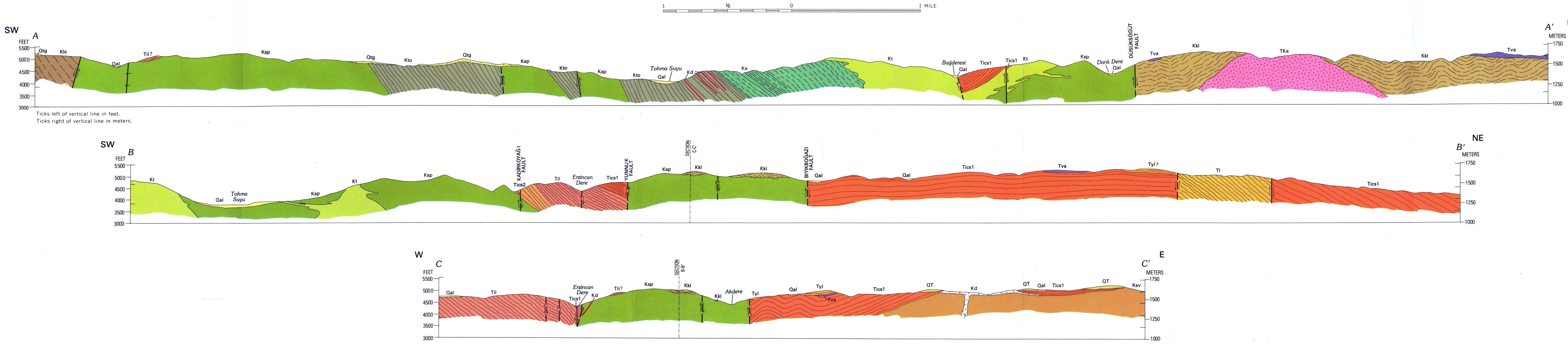
BULLETIN 1429
PLATE 1



APPROXIMATE SCALE 1:25 000

1 .5 0 1 2 3 KILOMETERS

1 ½ 0 1 MILE



EXPLANATION

SEDIMENTARY ROCKS

Qal | Qls

Qal, alluvium; **Qls**, landslide deposits

Qtg

Terrace gravel

QT

Conglomerate

Unsorted to moderately sorted; in some places overlain by travertine; locally unconsolidated volcanic gravel

Td

Dolomite near Özbek

Thin-bedded white dolomite

Tyl | si

Limestone of Yapalaklı Tepe

Light-colored, freshwater limestone, locally leaf-bearing; forms caps on İnceciğin Dere sequence

si, *silicified zone east of Konaktepe*

Tics1 (Tics1) | Til | Tics2

Sedimentary sequence of İnceciğin Dere

Tics1, *bedrock outcrop*
(Tics1), *probable bedrock outcrop of upper unit: reddish, well-bedded sandstone and conglomerate with subordinate fossiliferous limestone and mudstone*
Til, *middle unit: white, bedded, unfossiliferous limestones*
Tics2, *lower unit: sandstone and conglomerate generally similar to* **Tics1**, *greenish-gray mudstone near top of section*

Tl | si

Limestone of Çaltepe

Gray and massive or yellow and thin-bedded nummulitic limestone
si, *silicified and iron-stained zones*

Eocene

Kkl

Limestone of Karapınar Dere

Gray, massive, fractured, locally cherty, unfossiliferous limestone

Klc

Limestone of Çakşan Tepe

Ks | Ksv | Ksvm

Sofular Formation

Ks, *tuffaceous graywacke, slightly welded tuff; possible mafic flows, and platy dolomite; conglomeratic near base*
Ksv, *predominantly pillow basalt*
Ksvm, *metasomatized mafic rocks*

Kto | Ktl

Tökler Formation

Kto, *predominantly conglomerate with gabbro and serpentine cobbles, subordinate siltstone, and dolomite*
Ktl, *rudistid-bearing limestone reefs in upper part*

Tohma Group

INTRUSIVE AND VOLCANIC ROCKS

Tvo | Tva | Tvd | Tvb

Post-Eocene volcanic sequence

Tvo, *olivine basalt*
Tva, *hypersthene-bearing andesite*
Tvd, *hornblende dacite*
Tvb, *locally interbedded tuff-breccia*

TKa

Alkalic syenite of Avlıya Dere

Ktd | Kt | Ktp

Trachytes

Kt, *trachyte gradational to trachyandesite (probably partly intrusive and partly extrusive)* **Ktd**, *dike*
Ktp, *probably gradational trachyte porphyry. Local trachytic tuff not differentiated*

Kd

Alkalic diabase

Sills, plugs, and possibly some flows of alkalic diabase, predominantly associated with the Sofular Formation

Ksp | Kgs | Kg

Serpentinite-gabbro complex

Ksp, *serpentinite*
Kg, *gabbro plugs*
Kgs, *isolated small sheared plugs of silicified gabbro. Serpentinite is in many places weathered to a thick silicified crust (dark stipple) or thin crust (light stipple)*

QUATERNARY

TERTIARY

UPPER CRETACEOUS

PRE-UPPER CRETACEOUS

Contact—Approximately located

Fault—Showing dip; dashed where approximate; queried where inferred; dotted where concealed. U, upthrown; D, downthrown. Arrows show direction of relative movement

Strike and dip of beds

Strike and dips of joints in trachyte

Fossil locality—Described by number in text

Sample locality for radiometric age date

Exposure of iron oxide—Numbers keyed to description in text

Mine or mineral prospect of base metals—Numbers keyed to description in text

Mine or prospect of chromite—Numbers keyed to description in text

Pb 155 Zn 600 Cu 100 (14) Stream sediment sample—Quantitative Pb, Zn, and Cu were determined (cold-extractable Pb, Zn, and Cu >28 ppm)

Semiquantitative (cold-extractable) Pb, Zn, and Cu 10–28 ppm

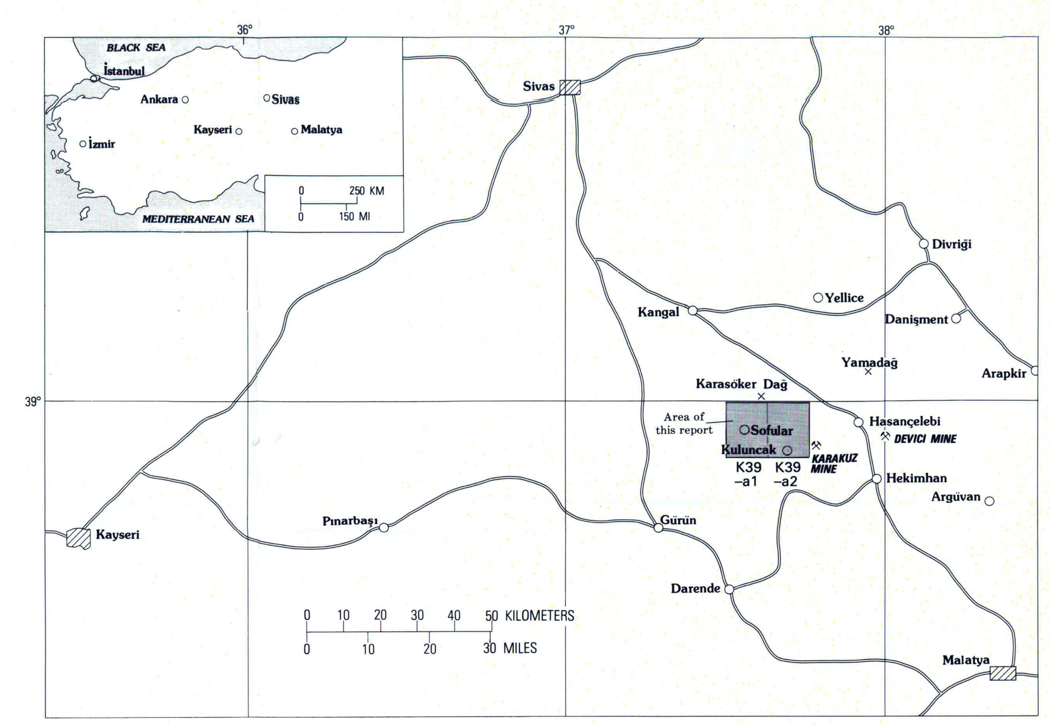
Semiquantitative (cold-extractable) Pb, Zn, and Cu 4–10 ppm

Semiquantitative (cold-extractable) Pb, Zn, and Cu 2–4 ppm

Semiquantitative (cold-extractable) Pb, Zn, and Cu <2 ppm

Summit of hill

Village location—Areas of high density population shown



MAP SHOWING LOCATION OF THE KULUNCAK-SOFULAR AREA

GEOLOGIC MAP AND SECTIONS OF THE K39–a1 AND K39–a2 QUADRANGLES, TURKEY