

Turkish Delights

The Geology of Turkey



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Istanbul



Istanbul



But enough of Istanbul



At the joining of continents

Alpine Mountain Chain - Tertiary Age

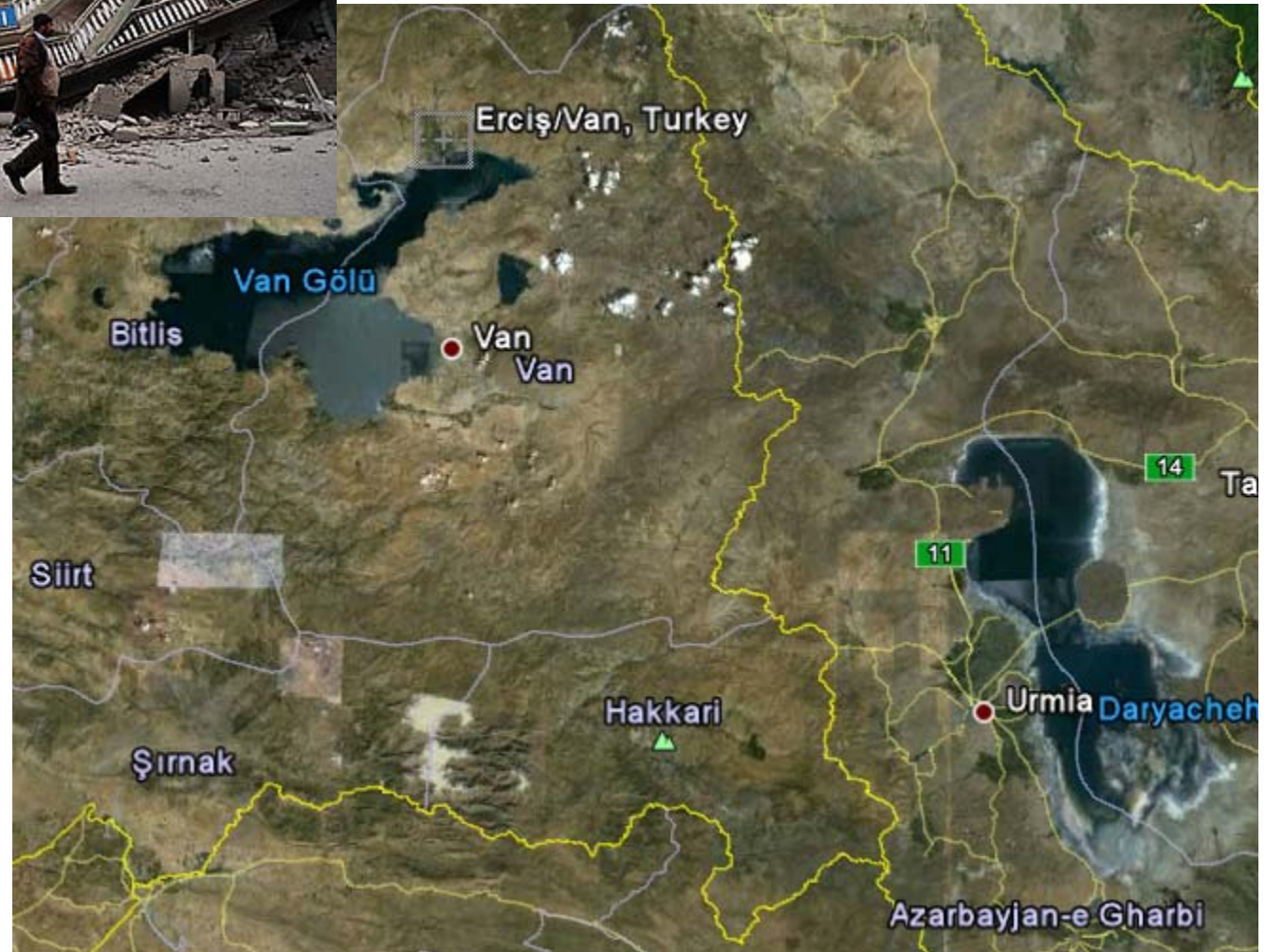
- Formed as the Arabian, African, and Indian plates collided with the Eurasian plate

Still active as the African Plate converges with the Eurasian Plate. Anatolian Plate escapes towards the west and southwest via

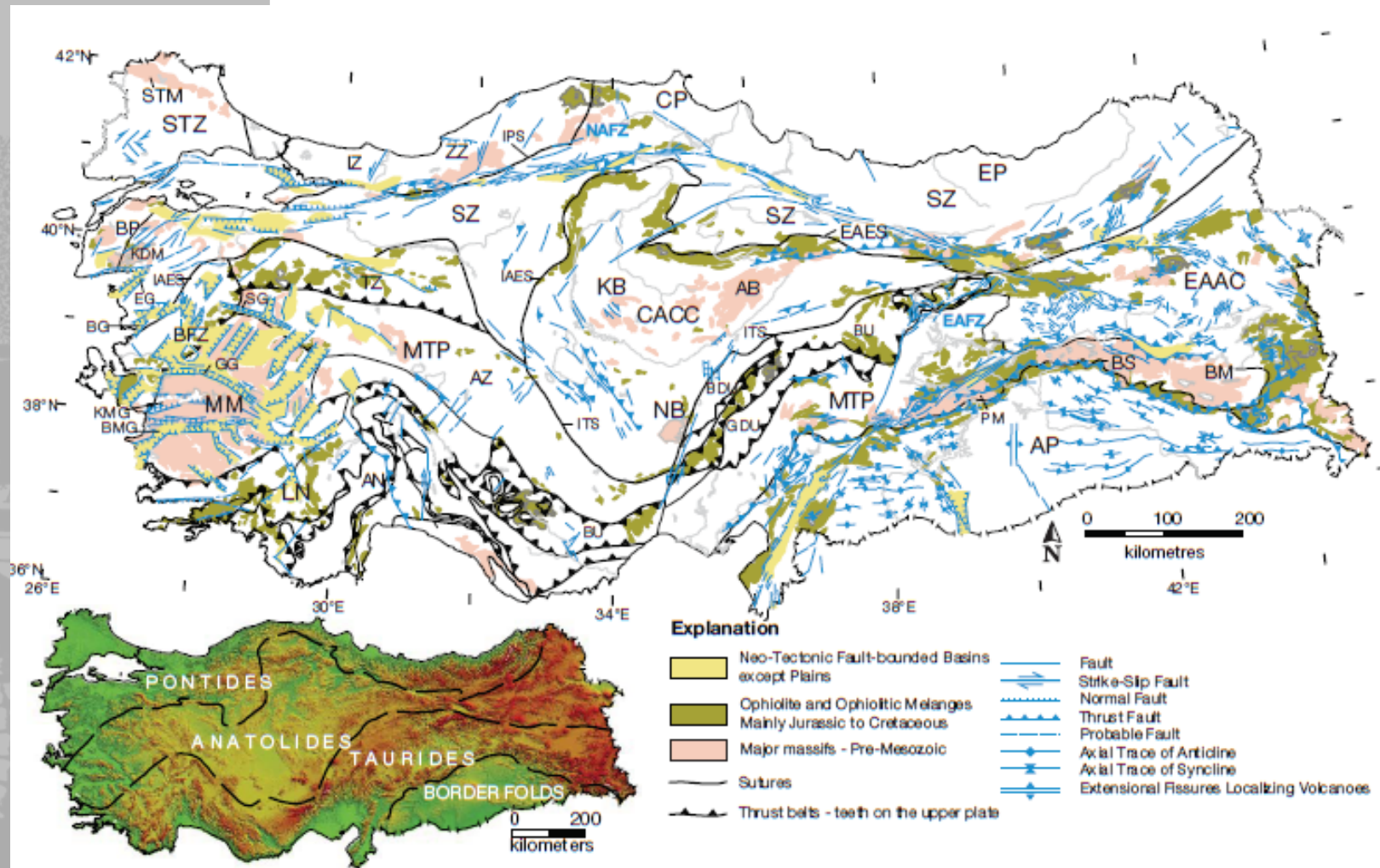
- North Anatolian Fault Zone (near the Black Sea)
- East Anatolian Fault Zone

Seismically active

Sunday's Quake



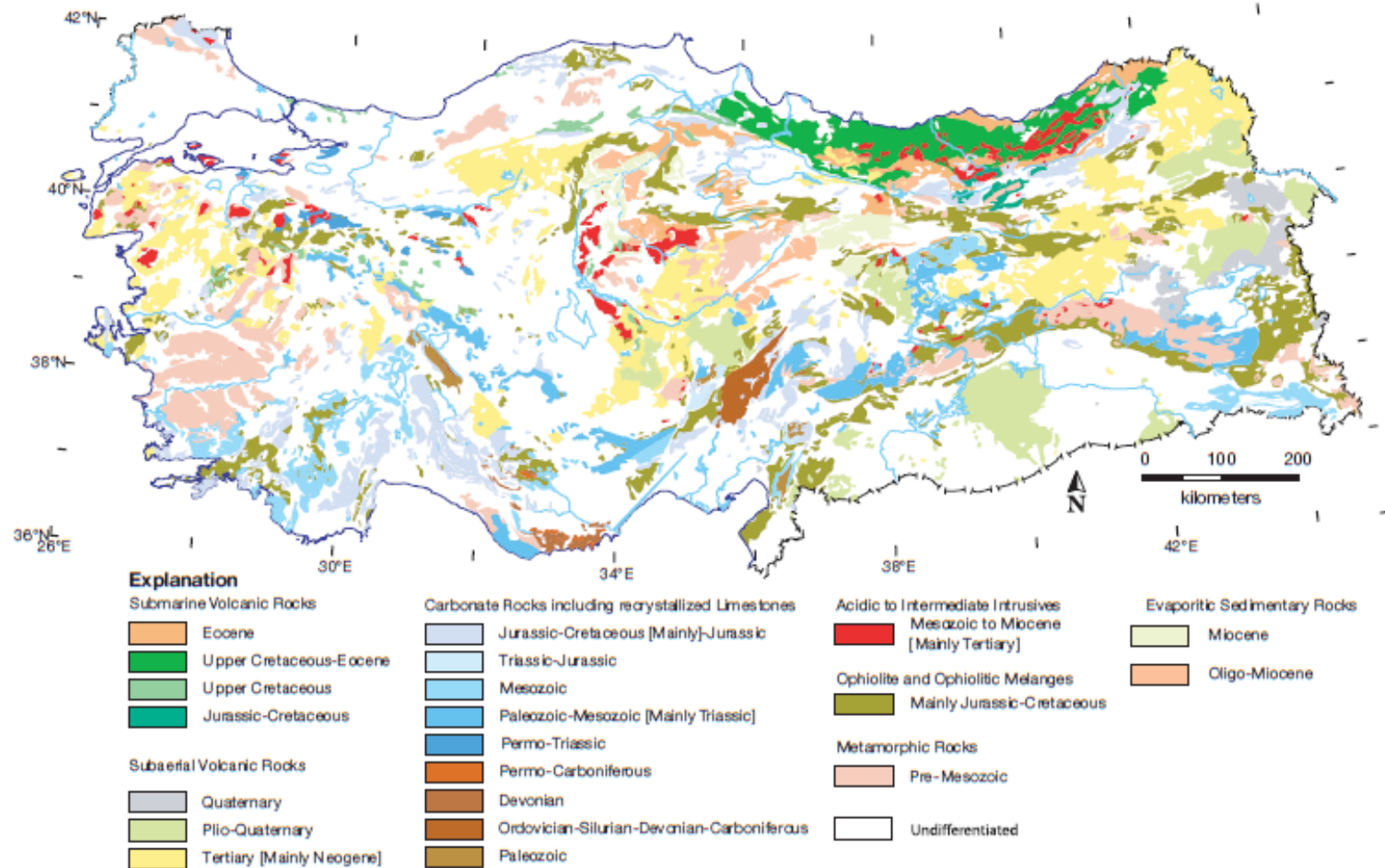
Structural Geology



Thrust Ramps



Stratigraphy



Deposit styles

Intense tectonism has resulted in a wide variety of deposit types

- Igneous – primary mafic rocks and granitic intrusions
- Sedimentary – recent erosion and older deep water deposits
- Metamorphic – contact and pressure

Tend to get **fields of deposits** rather than a single mega-deposit

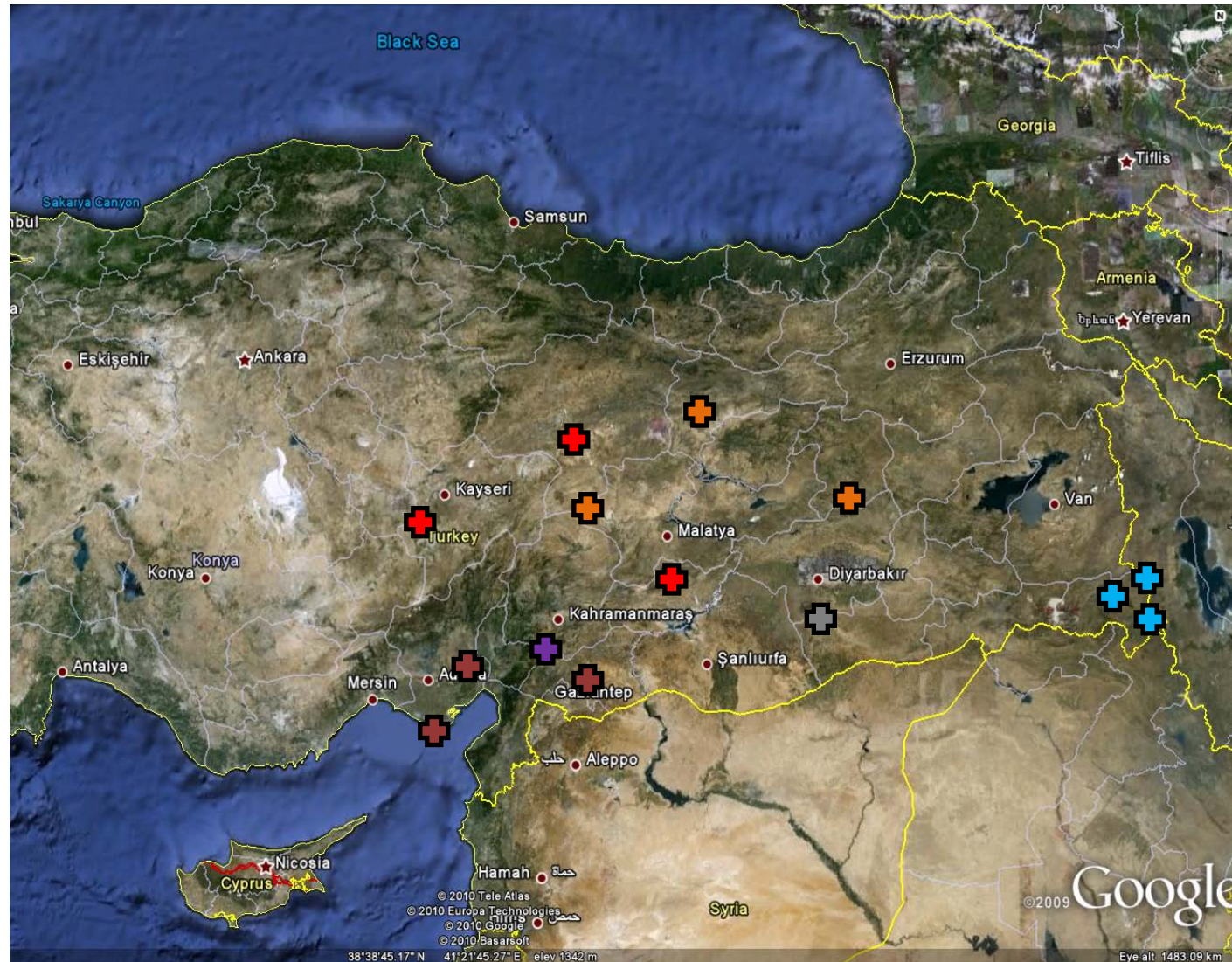
Minerals

| Type | Minerals |
|------------------|--------------------|
| Kuroka-type VMS | Cu, Au, Ag, Zn |
| Cyprus-type VMS | Cu, Au, Ag, Zn |
| Epithermal | Au, Ag, Cu, Pb, Zn |
| IOCG | Cu, Au, W |
| Carbonate hosted | Pb, Zn |
| Podiform | Cr |
| Laterite | Ni, Co |
| Karstic | Bauxite (U??) |
| Deep water | Mn, Fe |
| Deltaic | Lignite |
| Skarn | Fe, Cu |

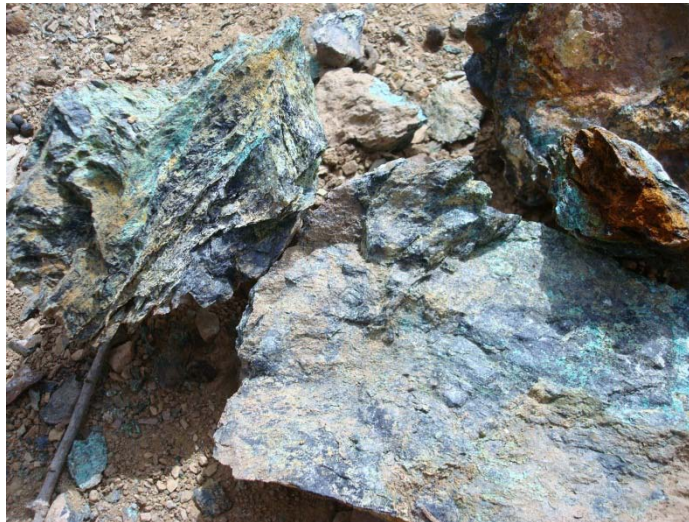
Plus extensive marble and limestone deposits

Some of the fields

- ✚ Copper
- ✚ Iron
- ✚ Manganese
- ✚ Nickel
- ✚ Lead
- ✚ Zinc



Copper (Bakir)



Ophiolite copper



The Joshua Tree



Sakayra



Granite hosted copper veins



In the field



In the field



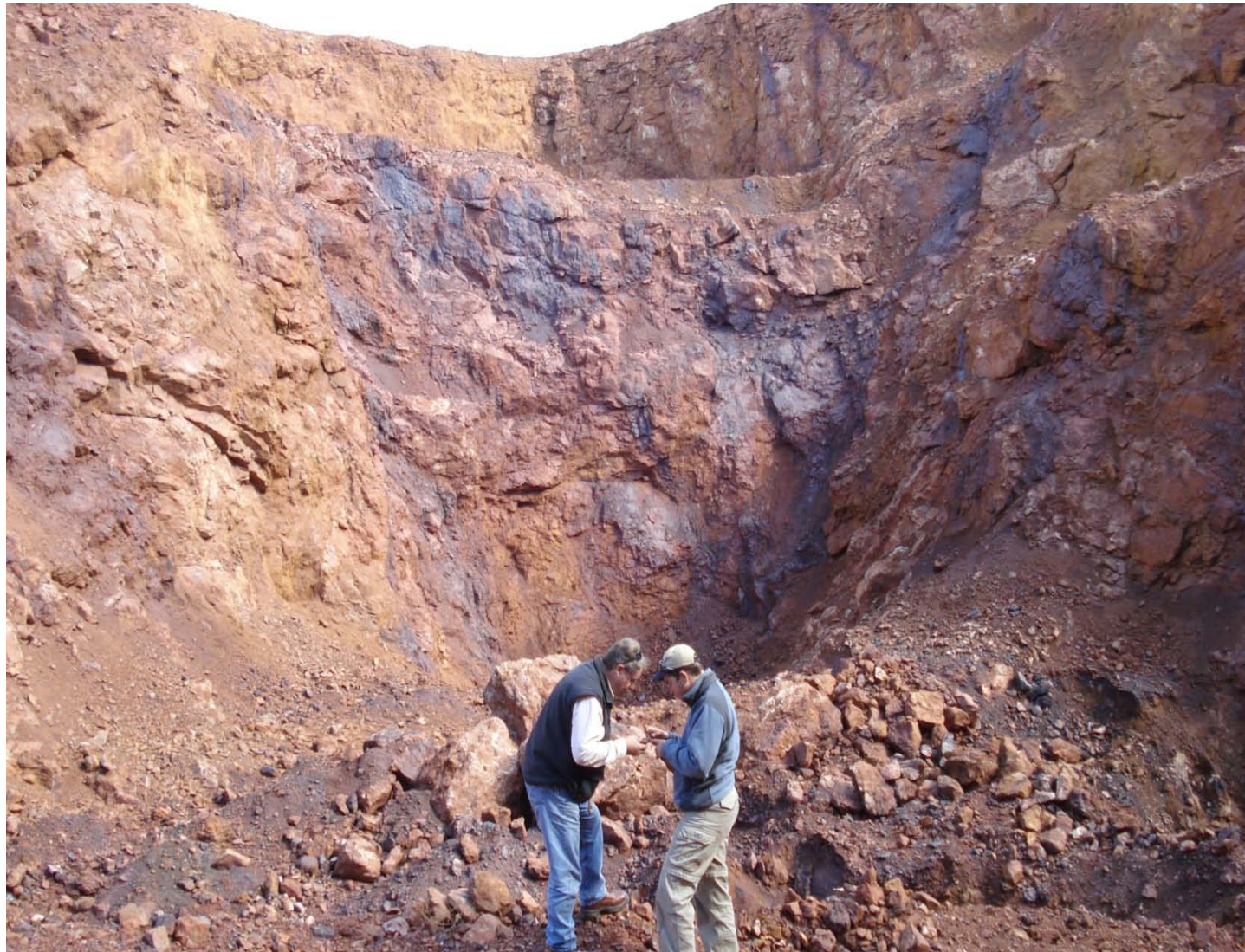
Iron (Demir)



Malatya



Our first iron ore



Lunch?



Nickel (Nikel)



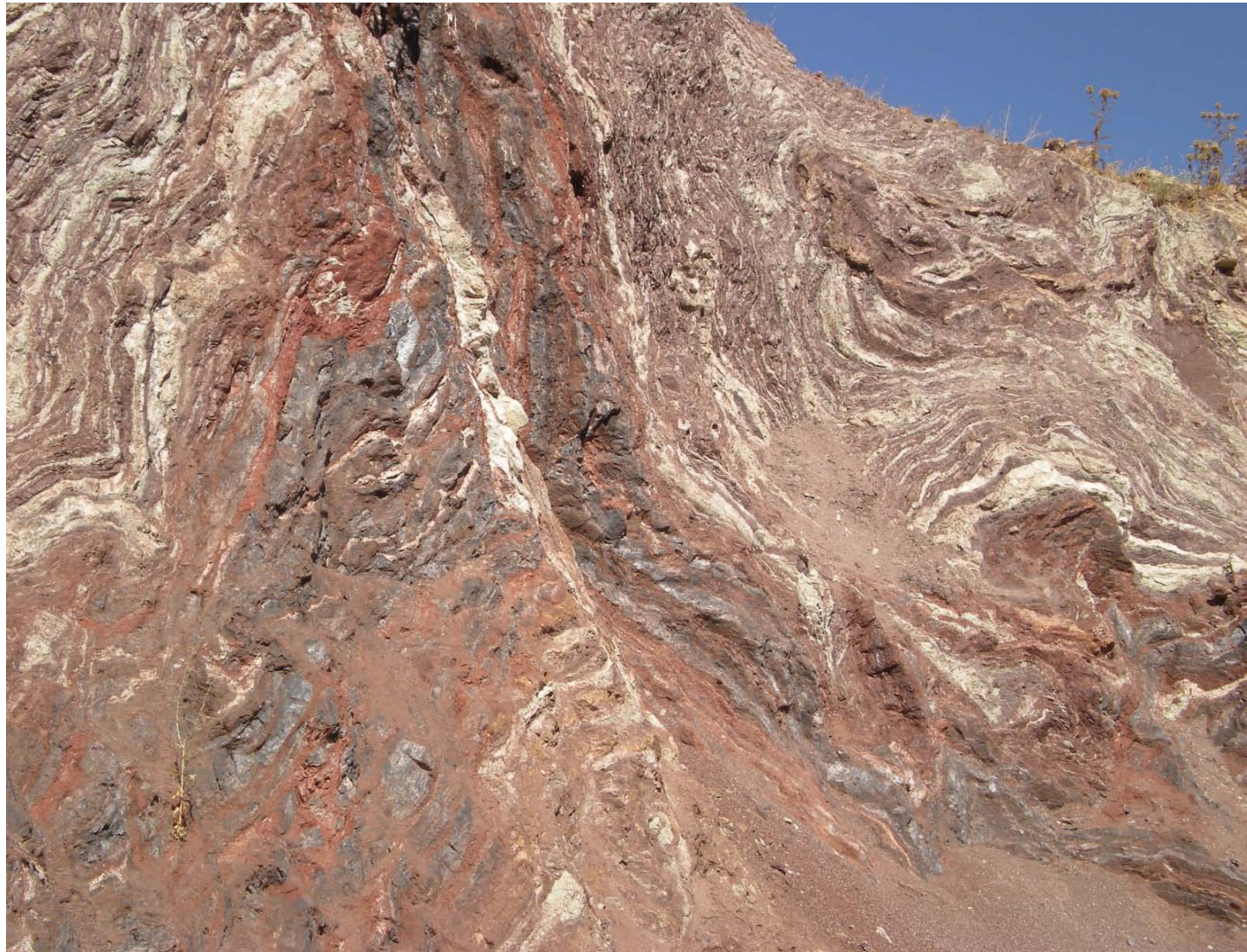
Cold and wet



Hot things at the nickel deposit



Manganese (Mangaan)



Manganese and grapes



Village of Sadik



Manganese at Sadik



A goat (keci) from Sadik



Lead (Kursun)



Heavy peach trees



Strong enough for the fruit?



Hakkari Zinc (chinco)



Oxidised zinc



Beautiful spring rivers



Winter snow



Hemimorphite



In the field



Geological Legends



A hot day



Chilling Out



A Real Legend



Acknowledgements

This work was performed whilst
working for and later consulting to
Red Crescent Resources

It is really fantastic to share this
geological experience

And of course the time with the
legends!